

SUZUKI

LT-A750XP/Z

SUPPLEMENTARY SERVICE MANUAL

USE THIS MANUAL WITH:
LT-A750X/Z SERVICE MANUAL (99500-47021-01E)



FOREWORD

This SUPPLEMENTARY SERVICE MANUAL is a supplement to SUZUKI LT-A750X/Z SERVICE MANUAL. It has been prepared exclusively for the following applicable model.

Applicable model:
LT-A750XK9

This supplementary service manual describes only service information which differ from that of the main manual. Therefore, whenever servicing the above applicable model, consult this supplement first. And for any section, item or description not found in this supplement, refer to the main manual below.

Main Manual:

Manual Name	Manual No.
LT-A750X/ZK9 SERVICE MANUAL	99500-47021-01E

Other information considered as generally known is not included.

Read the GENERAL INFORMATION section to familiarize yourself with the vehicle and its maintenance. Use this section as well as other sections to use as a guide for proper inspection and service.

This manual will help you know the vehicle better so that you can assure your customers of fast and reliable service.

- * This manual has been prepared on the basis of the latest specifications at the time of publication. If modifications have been made since then, differences may exist between the content of this manual and the actual vehicle.*
- * Illustrations in this manual are used to show the basic principles of operation and work procedures. They may not represent the actual vehicle exactly in detail.*
- * This manual is written for persons who have enough knowledge, skills and tools, including special tools, for servicing SUZUKI vehicles. If you do not have the proper knowledge and tools, ask your authorized SUZUKI motorcycle dealer to help you.*

⚠ WARNING

Inexperienced mechanics or mechanics without the proper tools and equipment may not be able to properly perform the services described in this manual.

Improper repair may result in injury to the mechanic and may render the vehicle unsafe for the rider.

SUZUKI MOTOR CORPORATION

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SAMPLE

Section 00

Precautions

CONTENTS

NOTE

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SAMPLE

Precautions

Precautions

Precautions for EPS (LT-A750XP/ZK9)

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EPS Wiring

- The EPS parts are connected to various lead wires. The coupler and lead wire connections, as well as the lead wire and wire harness routings must be done correctly. Make sure that the proper clamps are used and positioned correctly.

NOTE

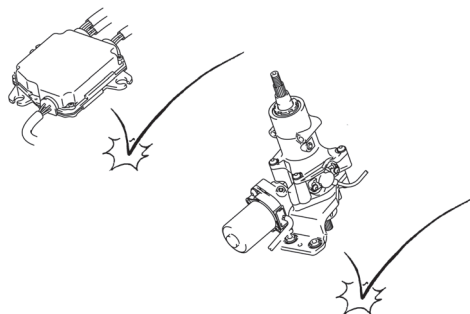
If all of the connections are not properly connected, the EPS may not operate correctly. For connector and coupler precautions. Refer to "Precautions for Electrical Circuit Service in related manual".

EPS Control Unit / EPS Body Assembly

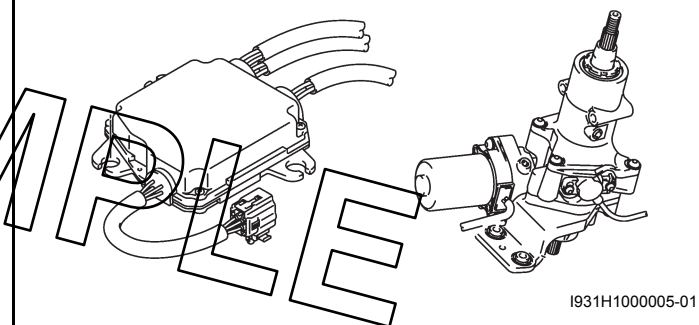
- Never allow dust or water to contact the EPS control unit and EPS body assembly.



- Since each component is a high-precision part, great care should be taken not to apply any service impacts during removal and installation.



- The EPS control unit and EPS body assembly cannot be disassembled. Replace the whole unit with a new one.



Section 0

General Information

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NOTE

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General Information

General Description

Abbreviations (LT-A750XP/ZK9)

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NOTE

Please refer to the LT-A750XK9 ('09-model) service manual for other abbreviations which are not given in this manual.

E:
EPS: Electronic Power Steering

Vehicle Side View (LT-A750XP/ZK9)

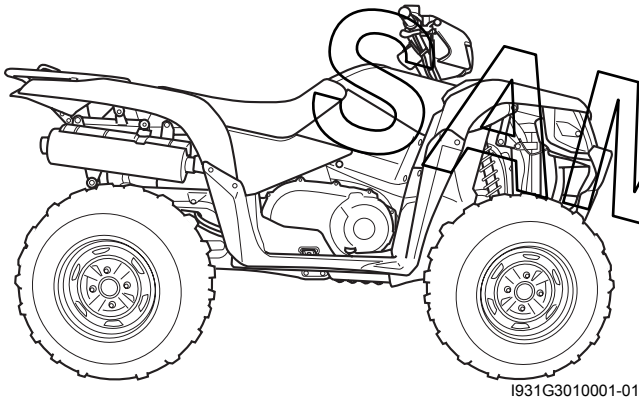
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NOTE

Difference between illustration and actual motorcycles may exist depending on the markets.

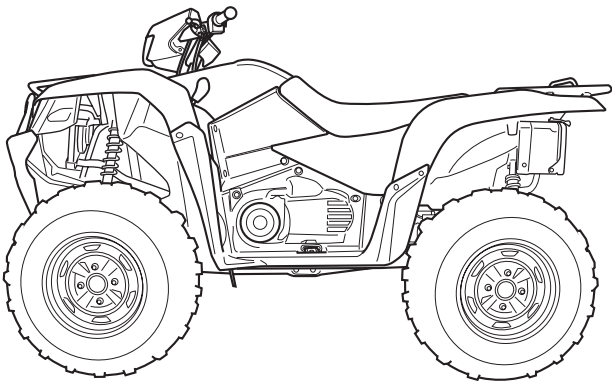
SUZUKI LT-A750XP (2009-model)

Right Side



I931G3010001-01

Left Side



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Country and Area Codes (LT-A750XP/ZK9)

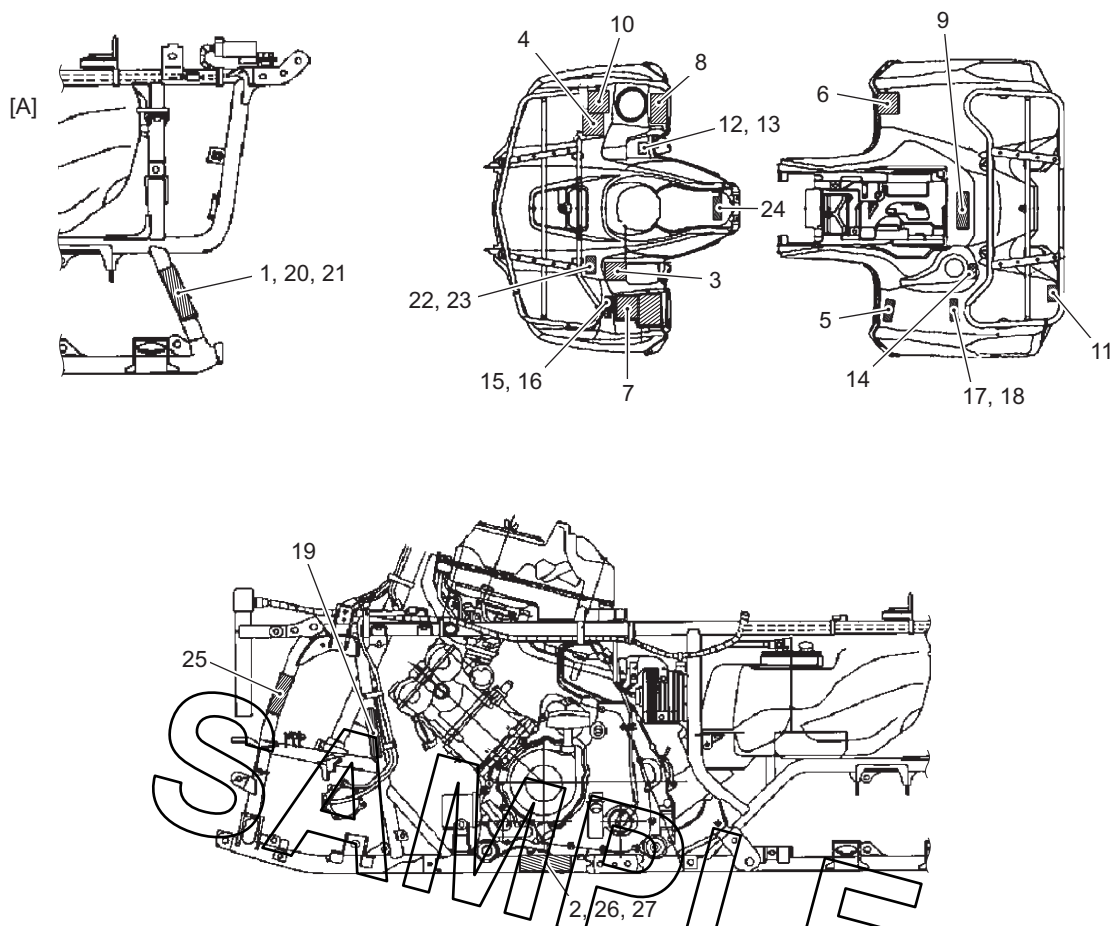
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The following codes stand for the applicable country(-ies) and area(-s).

Code	Country or Area	Effective Frame No.
LT-A750XPK9 (P-17)	Sweden	5SAAR41P97100001 –
LT-A750XPK9 (P-24)	Australia	
LT-A750XPK9 (P-28)	Canada	
LT-A750XPK9 (P-33)	U.S.A.	
LT-A750XPZK9 (P-17)	Sweden	
LT-A750XPZK9 (P-24)	Australia	
LT-A750XPZK9 (P-28)	Canada	
LT-A750XPZK9 (P-33)	U.S.A.	

Warning, Caution and Information Labels Location (LT-A750XP/ZK9)

B931G30101015



I931H1010010-03

1. Certification plate (English)	For P-24, 33	15. Front carrier warning label (English)	For P-24, 33
2. Information label (English)	For P-33	16. Front carrier warning label (English/French)	For P-17, 28
3. Gearshift label (English)	For P-17, 24, 28, 33	17. Rear carrier warning label (English)	For P-24, 33
4. Gearshift label (French)	For P-28	18. Rear carrier warning label (English/French)	For P-17, 28
5. Tire air pressure label (English)	For P-17, 24, 28, 33	19. ICES Canada label (English/French)	For P-28
6. Tire air pressure label and warning no-passenger label (French)	For P-28	20. Compliance label (English)	For P-28
7. General warning & AGE, 16 label (English)	For P-17, 24, 28, 33	21. I.D. plate (English)	For P-17
8. General warning label (French)	For P-28	22. Cooling fan label (English)	For P-24, 33
9. Warning no-passenger label (English)	For P-17, 24, 28, 33	23. Cooling fan label (English/French)	For P-17, 28
10. AGE, 16 label (French)	For P-28	24. Compliance label (English/French)	For P-28
11. Manual notice label (English)	For P-33	25. ANSI certification label (Right side of frame)	For P-33
12. Max AMP caution label (English)	For P-24, 33	26. Information label (English)	For P-28
13. Max AMP caution label (English/French)	For P-17, 28	27. Information label (French) (Right side of frame)	For P-28
14. Fuel caution label (English)	For P-24	[A]: Left side of frame	

Specifications

Specifications (LT-A750XP/ZK9)

B931G30107003

NOTE

These specifications are subject to change without notice.

Dimensions and curb mass

Item	Specification	Remark
Overall length	2 115 mm (83.3 in)	P-28, 33
	2 165 mm (85.2 in)	P-17, 24
Overall width	1 210 mm (47.6 in)	P-28, 33
	1 250 mm (49.2 in)	P-17, 24
Overall height	1 285 mm (50.6 in)	
Wheelbase	1 285 mm (50.6 in)	
Ground clearance	260 mm (10.2 in)	
Seat height	920 mm (36.2 in)	
Curb mass	305 kg (672 lbs)	P-28, 33
	307 kg (677 lbs)	P-17, 24
Front track	940 mm (37.0 in)	
Rear track	920 mm (36.2 in)	

Engine

Item	Specification	Remark
Type	4-stroke, liquid-cooled, DOHC	
Number of cylinders	1	
Bore	104.0 mm (4.094 in)	
Stroke	85.0 mm (3.346 in)	
Displacement	722 cm ³ (44.1 cu. in.)	
Compression ratio	10.0 : 1	
Fuel system	Fuel injection	
Air cleaner	Paper element	
Starter system	Electric starter	
Lubrication system	Wet sump	
Idle speed	1 300 ± 100 r/min	

Drive train

Item	Specification	Remark
Clutch	Wet shoe, automatic, centrifugal type	
Transmission	CVT (V-belt)	
Transfer	2-speed forward with reverse	
Gearshift pattern	Transmission	Automatic
	Transfer	L-H-N-R (Hand operated)
Automatic transmission ratio	Variable change (2.763 – 0.78)	
Secondary reduction ratio	2.158 (40/21 x 17/15)	
Final reduction ratio (Front & Rear)	3.600 (36/10)	
Transfer gear ratio	Low	2.562 (41/16)
	High	1.240 (31/25)
	Reverse	1.882 (32/17)
Drive system	Shaft drive	

Chassis

Item	Specification	Remark
Front suspension	Independent, double wishbone, coil spring, oil damped	
Rear suspension	Independent, double wishbone, coil spring, oil damped	
Front wheel travel	170.5 mm (6.7 in)	
Rear wheel travel	195 mm (7.7 in)	
Caster	3.3°	
Trail	16.7 mm (0.66 in)	
Toe-out	5 mm (0.20 in)	
Camber	-1.3°	
Steering angle	46° (right & left)	
Turning radius	3.1 m (10.2 ft)	
Front brake	Disc brake, twin	
Rear brake	Sealed oil-bathed multi-disc	
Front tire size	AT25 x 8-12☆☆, tubeless	
Rear tire size	AT25 x 10-12☆☆, tubeless	

Electrical

Item	Specification	Remark
Ignition type	Electronic ignition (CDI)	
Ignition timing	7° B.T.D.C. at 1 300 r/min	
Spark plug	NGK CR6E or DENSO U20ESR-N	
Battery	12 V 64.8 kC (18 Ah)/10 HR	
Generator	Three-phase A.C. generator	
Main fuse	30 A	
Fuse	10/10/10/10/15/15 A	
EPS fuse	40 A	
Headlight	12 V 35/35 W x 2	
Auxiliary light	12 V 35/35 W	
Brake light/Taillight	12 V 21/5 W	
Reversing light	12 V 21 W	P-17
Speedometer light	LED	
Neutral indicator light	LED	
High beam indicator light	LED	P-17
Coolant temperature/FI indicator light	LED	
Reverse indicator light	LED	
Diff-lock indicator light	LED	
EPS indicator light	LED	

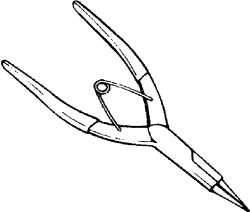
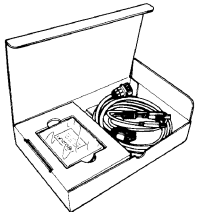
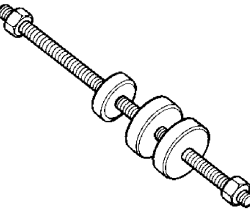
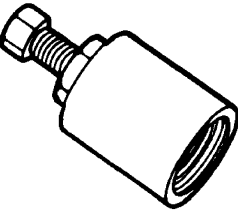
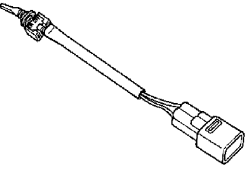

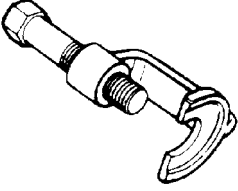

Capacities

Item	Specification	Remark
Fuel tank	17.5 L (4.6/3.8 US/lmp gal)	
Engine oil	Oil change	2 300 ml (2.4/2.0 US/lmp qt)
	With filter change	2 500 ml (2.6/2.2 US/lmp qt)
	Overhaul	3 000 ml (3.2/2.6 US/lmp qt)
Differential gear oil	500 ml (16.9/17.6 US/lmp oz)	
Final gear oil	770 ml (26.0/27.1 US/lmp oz)	
Coolant	2.5 L (2.6/2.2 US/lmp qt)	

Special Tools and Equipment

Special Tool

B931G30108002

 <p>09900-06107 Snap ring remover (Open type)</p>	 <p>09900-20102 Vernier calipers (200 mm)</p>	 <p>09900-25008 Multi circuit tester set</p>	 <p>09900-25009 Needle-point probe set</p>	 <p>09904-41010 SUZUKI Diagnostic system set</p>
 <p>09924-84521 Bearing installer set</p>	 <p>09930-30721 Rotor remover</p>	 <p>09930-44530 Rotor holder</p>	 <p>09930-82710 Mode select switch</p>	 <p>09930-82720 Mode selection switch</p>
 <p>09942-72410 Tie-rod end remover</p>	 <p>09942-83110 Clip remover</p>	 <p>09944-36011 Steering wheel remover</p>	 <p>99565-01010-020 CD-ROM Ver.20</p>	

Maintenance and Lubrication

Repair Instructions

Air Cleaner Element Inspection and Cleaning (LT-A750XP/ZK9)

B931G30206033

Clean element

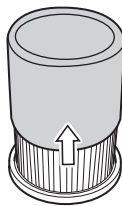
Every 1 000 km (600 miles, 3 months)

If the air cleaner is clogged with dust, intake resistance will be increased, with a resultant decrease in power output and an increase in fuel consumption. Check and clean the air cleaner element in the following manner.

⚠ CAUTION

- If driving under dusty conditions, clean the air cleaner element more frequently. The surest way to accelerate engine wear is to operate the engine without the element or to use a torn element. Make sure that the air cleaner is in good condition at all times. Life of the engine depends largely on this component.
- Inspect the air cleaner element for tears. A torn element must be replaced.

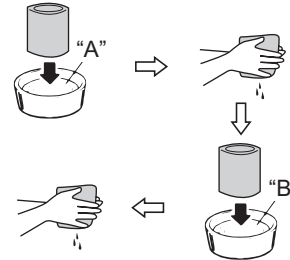
- 1) Remove the air cleaner element. Refer to "Air Cleaner Element Removal and Installation in Section 1D in related manual".
- 2) Separate the polyurethane from element.



I831G1020002-01

- 3) Fill a wash pan of a proper size with a non-flammable cleaning solvent. Immerse the air cleaner element in the cleaning solvent and wash it.
- 4) Press the air cleaner element between the palms of both hands to remove the excess solvent: do not twist or wring the element or it will tear.

- 5) Immerse the element in motor oil, and then squeeze out the excess oil leaving the element slightly wet.

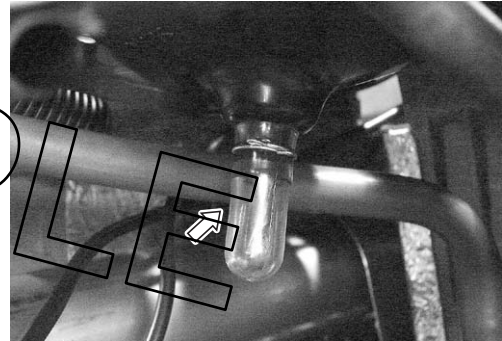


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"A": Non-flammable cleaning solvent

"B": Motor oil SAE #30 or SAE 10W-40

- 6) After cleaning the air cleaner element, reinstall the removed parts.
- 7) Drain water from the air cleaner box by removing the drain plug.



I831G1020004-01

- 8) Reinstall the drain plug.

Steering System Inspection (LT-A750XP/ZK9)

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Inspect steering system

Initially at 200 km (100 miles, 1 month) and every 1 000 km (600 miles, 3 months) thereafter

Steering should be adjusted properly for smooth turning of handlebars and safe running.

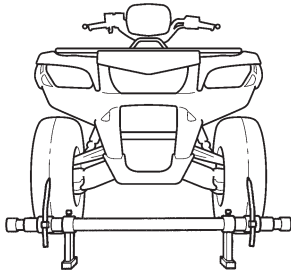
- 1) Place the vehicle on level ground.
- 2) Make sure the tire pressure for right and left tires in the same and set to the proper specification.
- 3) Set the front wheels in the straight position.
- 4) Place a load of 75 kg (165 lbs) on the seat.

0B-2 Maintenance and Lubrication:

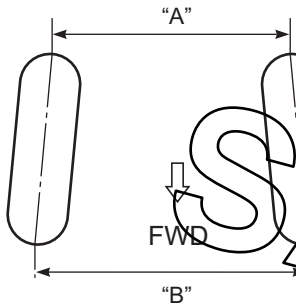
- 5) Measure the distances ("A" and "B") between the front wheels. Subtract the measurement of "A" from that of "B" to find the toe-out. If the toe-out is not within specification, adjust the tie-rod to the right or left until the toe-out is within the specified range.

Toe-out ("B" – "A")

Standard: 5 ± 4 mm (0.20 ± 0.16 in)



I931H1020057-01



I831G1020059-04

If the toe-out is out of specification, bring it into the specified range. Refer to "Toe Adjustment (LT-A750XP/ZK9) (Page 0B-2)".

Toe Adjustment (LT-A750XP/ZK9)

B931G30206031

Adjust the toe-out as follows:

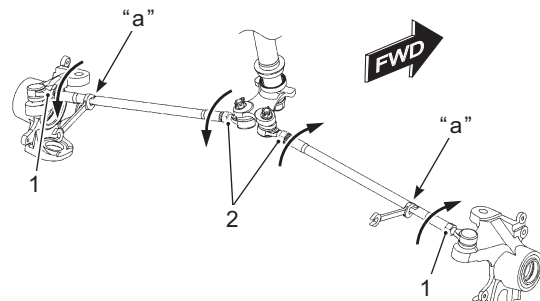
- 1) Loosen the lock-nuts (1), (2) on each tie-rod.

CAUTION

- The lock-nuts (2) have left-hand threads.
- When loosening and tightening the lock-nuts, hold the tie-rod end with a open end wrench.

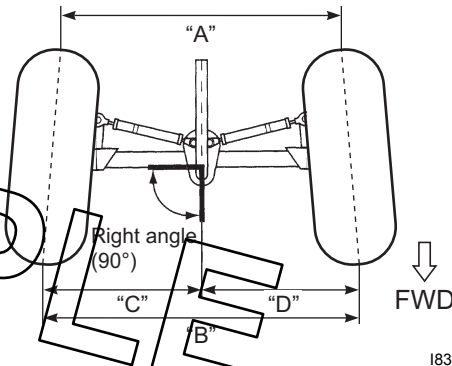
NOTE

Hold the concave part "a" of tie-rod with a wrench.



I931H1020079-02

- 2) Temporarily tighten the four lock-nuts.
- 3) Check that the distances "C" and "D" are equal, as shown. If the distances are not equal, adjust the tie-rod to the right or left until the toe-out is within specification. Check the toe-out again by measuring distances "A" and "B".
- 4) If the toe-out is not within specification, repeat the adjustment as above until the proper toe-out is obtained and distances "C" and "D" become equal.

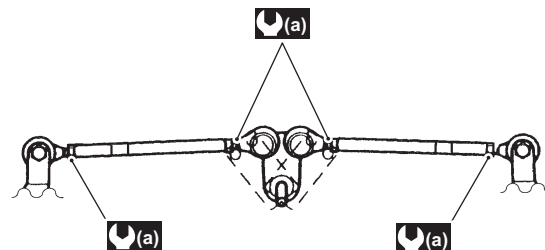


I831G1020088-04

- 5) After adjustment has been made, tighten the four lock-nuts to the specified torque.

Tightening torque

Tie-rod lock-nut (a): 29 N·m (2.9 kgf-m, 21.0 lbf-ft)



I831G1020089-01

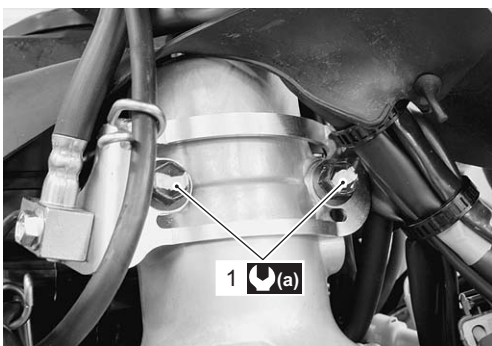
Chassis Bolt and Nut Inspection (LT-A750XP/ZK9)

B931G30206032

Tighten chassis bolt and nut

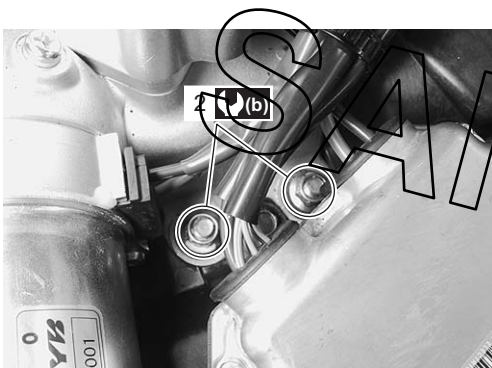
Initially at 200 km (100 miles, 1 month) and every 1 000 km (600 miles, 3 months) thereafter

Check that all chassis bolts and nuts are tightened to their specified torque.



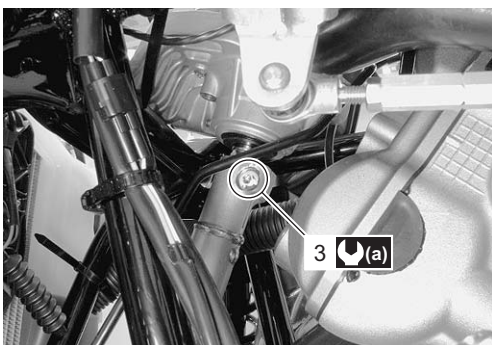
I931G3020001-01

- 1 (a) EPS body assembly mounting bolt (Upper) 26 N·m (2.6 kgf-m, 19.0 lbf-ft)



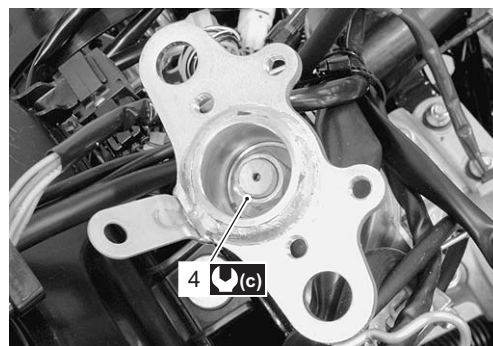
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- 2 (b) EPS body assembly mounting nut (Lower) 28 N·m (2.8 kgf-m, 20.0 lbf-ft)



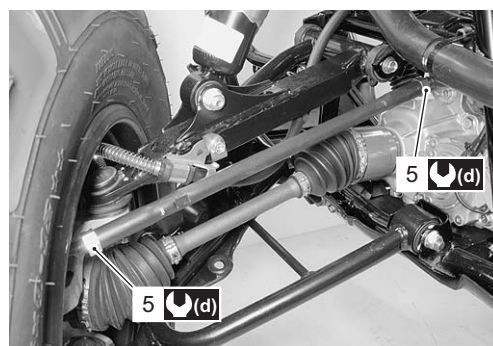
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- 3 (a) Steering shaft bolt 26 N·m (2.6 kgf-m, 19.0 lbf-ft)



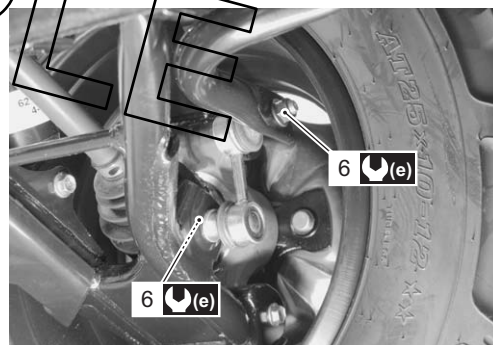
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- 4 (c) Steering shaft upper nut 120 N·m (12.0 kgf-m, 87.0 lbf-ft)



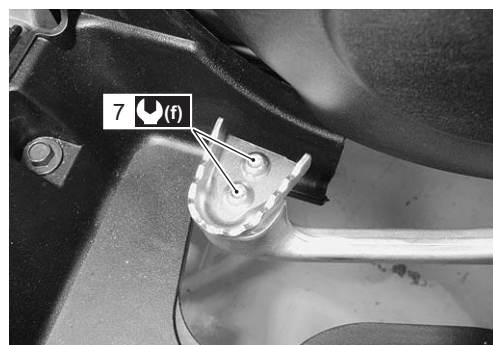
I931G3020005-02

- 5 (d) Tie-rod lock-nut 29 N·m (2.9 kgf-m, 21.0 lbf-ft)



I931G3020007-02

- 6 (e) Rear stabilizer joint nut 60 N·m (6.0 kgf-m, 43.5 lbf-ft)



I931G3020008-01

- 7 (f) Rear brake pedal screw 4.5 N·m (0.45 kgf-m, 3.0 lbf-ft)

Specifications

Tightening Torque Specifications

B931G30207001

Fastening part	Tightening torque			Note
	N·m	kgf·m	lbf·ft	
Tie-rod lock-nut	29	2.9	21.0	☞ (Page 0B-2)

NOTE

The specified tightening torque is described in the following.
“Chassis Bolt and Nut Inspection (LT-A750XP/ZK9) (Page 0B-3)”

Reference:
For the tightening torque of fastener not specified in this section, refer to “Tightening Torque List (LT-A750XP/ZK9) in Section 0C (Page 0C-7)”.

SAMPLE

Service Data

Specifications

Service Data (LT-A750XP/ZK9)

B931G30307003

Valve + Valve Guide

Unit: mm (in)

Item		Standard	Limit
Valve diam.	IN.	36.0 (1.42)	—
	EX.	33.0 (1.30)	—
Tappet clearance (When cold)	IN.	0.10 – 0.20 (0.004 – 0.008)	—
	EX.	0.20 – 0.30 (0.008 – 0.012)	—
Valve guide to valve stem clearance	IN.	0.010 – 0.037 (0.0004 – 0.0015)	—
	EX.	0.030 – 0.057 (0.0012 – 0.0022)	—
Valve guide I.D.	IN. & EX.	5.500 – 5.512 (0.2165 – 0.2170)	—
Valve stem O.D.	IN.	5.475 – 5.490 (0.2156 – 0.2161)	—
	EX.	5.455 – 5.470 (0.2148 – 0.2154)	—
Valve stem deflection	IN. & EX.	—	0.35 (0.014)
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve seat width	IN. & EX.	0.9 – 1.1 (0.035 – 0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length	IN. & EX.	—	46.1 (1.81)
Valve spring tension	IN. & EX.	182 – 210 N (18.6 – 21.4 kgf, 41.0 – 47.2 lbs) at length 36.35 mm (1.43 in)	—

Camshaft + Cylinder Head

Unit: mm (in)

Item		Standard	Limit
Cam height	IN.	36.380 – 36.380 (1.4303 – 1.4323)	36.030 (1.4185)
	EX.	35.300 – 35.350 (1.3898 – 1.3917)	35.000 (1.3780)
Camshaft journal oil clearance	IN. & EX.	0.019 – 0.053 (0.0007 – 0.0021)	0.150 (0.0059)
Camshaft journal holder I.D.	IN. & EX.	22.012 – 22.025 (0.8666 – 0.8671)	—
Camshaft journal O.D.	IN. & EX.	21.972 – 21.993 (0.8650 – 0.8659)	—
Camshaft runout	IN. & EX.	—	0.10 (0.004)
Cylinder head distortion		—	0.05 (0.002)
Cam drive idle gear/sprocket thrust clearance		0.15 – 0.27 (0.006 – 0.011)	—

0C-2 Service Data:**Cylinder + Piston + Piston Ring**

Unit: mm (in)

Item	Standard			Limit
Compression pressure (Automatic-decomp. actuated)	Approx. 1 000 kPa (10.0 kgf/cm ² , 142 psi)			—
Piston-to-cylinder clearance	0.030 – 0.040 (0.0012 – 0.0016)			0.120 (0.0047)
Cylinder bore	104.000 – 104.015 (4.0945 – 4.0951)			Nicks or Scratches
Piston diam.	103.965 – 103.980 (4.0931 – 4.0937) Measure at 15 mm (0.6 in) from the skirt end.			103.880 (4.0898)
Cylinder distortion	—			0.05 (0.002)
Piston ring free end gap	1st	R	Approx. 13.1 (0.52)	10.5 (0.41)
	2nd	RN	Approx. 14.6 (0.57)	11.7 (0.46)
Piston ring end gap	1st	R	0.10 – 0.25 (0.004 – 0.010)	0.50 (0.020)
	2nd	RN	0.10 – 0.25 (0.004 – 0.010)	0.50 (0.020)
Piston ring-to-groove clearance	1st	—		0.180 (0.0071)
	2nd	—		0.150 (0.0059)
Piston ring groove width	1st	0.83 – 0.85 (0.0327 – 0.0335)		—
		1.30 – 1.32 (0.0512 – 0.0520)		
	2nd	1.01 – 1.03 (0.0398 – 0.0406)		—
	Oil	2.01 – 2.03 (0.0791 – 0.0799)		—
Piston ring thickness	1st	0.76 – 0.81 (0.0299 – 0.0319)		—
		1.08 – 1.10 (0.0425 – 0.0433)		—
	2nd	0.97 – 0.99 (0.0382 – 0.0390)		—
Piston pin bore I.D.	23.002 – 23.008 (0.9056 – 0.9058)			23.030 (0.9067)
Piston pin O.D.	22.992 – 23.000 (0.9052 – 0.9055)			22.980 (0.9047)

Conrod + Crankshaft

Unit: mm (in)

Item	Standard			Limit
Conrod small end I.D.	23.006 – 23.014 (0.9057 – 0.9061)			23.040 (0.9071)
Conrod deflection	—			3.0 (0.12)
Conrod big end side clearance	0.10 – 0.75 (0.004 – 0.030)			1.0 (0.04)
Conrod big end width	24.95 – 25.00 (0.982 – 0.984)			—
Crank web to web width	72.9 – 73.1 (2.87 – 2.88)			—
Crankshaft runout	—			0.08 (0.003)

Oil Pump

Item	Standard	Limit
Oil pressure (at 60 °C, 140 °F)	140 – 180 kPa (1.4 – 1.8 kgf/cm ² , 20 – 26 psi) at 3 000 r/min	—

Clutch

Unit: mm (in)

Item	Standard	Limit
Clutch wheel I.D.	140.0 – 140.2 (5.512 – 5.520)	140.5 (5.53)
Clutch shoe	—	No groove at any part
Clutch engagement r/min	1 500 – 2 000 r/min	—
Clutch lock-up r/min	3 500 – 4 000 r/min	—

Drive Train

Unit: mm (in) Except ratio

Item		Standard	Limit
Automatic transmission ratio		Variable change (2.763 – 0.780)	—
Secondary reduction ratio		2.158 (40/21 x 17/15)	—
Final reduction ratio	Front	3.600 (36/10)	—
	Rear	3.600 (36/10)	—
Transfer gear ratio	Low	2.562 (41/16)	—
	High	1.240 (31/25)	—
	Reverse	1.882 (32/17)	—
Drive V-belt width		34.3 (1.35)	33.3 (1.31)
Movable driven face spring free length		160.0 (6.30)	152.0 (6.00)
Shift fork to groove clearance	Low	0.10 – 0.30 (0.0040 – 0.0120)	0.50 (0.020)
	High	0.10 – 0.30 (0.0040 – 0.0120)	0.50 (0.020)
	Reverse	0.10 – 0.30 (0.0040 – 0.0120)	0.50 (0.020)
Shift fork groove width	Low	5.50 – 5.60 (0.217 – 0.220)	—
	High	5.50 – 5.60 (0.217 – 0.220)	—
	Reverse	5.50 – 5.60 (0.217 – 0.220)	—
Shift fork thickness	Low	5.30 – 5.40 (0.209 – 0.213)	—
	High	5.30 – 5.40 (0.209 – 0.213)	—
	Reverse	5.30 – 5.40 (0.209 – 0.213)	—
Front/Rear output shaft bevel gear backlash		0.03 – 0.15 (0.001 – 0.006)	—
Front drive (differential) gear backlash		0.05 – 0.10 (0.002 – 0.004)	—
Rear drive (final) gear backlash	Without gear cover specification	0.02 – 0.06 (0.0008 – 0.0024)	—
	Gear cover assembled specification	0.08 – 0.15 (0.0031 – 0.0059)	—
Front differential gear oil type		Hypoid gear oil SAE #90, API grade GL-5	—
Rear drive gear oil type		Mobil 424 or equivalent gear oil	—
Front differential gear oil capacity		500 ml (16.9/17.6 US/Imp oz)	—
Final gear oil capacity		770 ml (26.0/27.1 US/Imp oz)	—

Thermostat + Radiator + Fan + Coolant

Item		Standard	Note
Thermostat valve opening temperature		Approx. 82 °C (180 °F)	
Thermostat valve lift		8 mm (0.31 in) and over at 95 °C (203 °F)	
ECT sensor resistance	20 °C (68 °F)	Approx. 2.45 kΩ	
	50 °C (122 °F)	Approx. 0.811 kΩ	
	80 °C (176 °F)	Approx. 0.318 kΩ	
	110 °C (230 °F)	Approx. 0.142 kΩ	
Radiator cap valve opening pressure		110 – 140 kPa (1.1 – 1.4 kgf/cm ² , 15.6 – 19.9 psi)	
Cooling fan thermo-switch operating temperature	OFF → ON	Approx. 93 °C (199 °F)	
	ON → OFF	Approx. 87 °C (189 °F)	
Engine coolant type		Use an antifreeze/coolant compatible with aluminum radiator, mixed with distilled water only, at the ratio of 50:50.	
Engine coolant	Reservoir	Approx. 250 ml (0.26/0.22 US/Imp qt)	
	Engine	Approx. 2 200 ml (2.32/1.94 US/Imp qt)	

0C-4 Service Data:**Injector + Fuel Pump + Fuel Pressure Regulator**

Item	Specification	Note
Injector resistance	11 – 13 Ω at 20 °C (68 °F)	
Fuel pump discharge amount	55.5 ml (1.88/1.95 US/Imp qt) and more/10 sec.	
Fuel pressure regulator operating set pressure	Approx. 294 kPa (2.9 kgf/cm ² , 41 psi)	

FI Sensors + Secondary Throttle Valve Actuator

Item	Specification		Note
CKP sensor resistance	150 – 250 Ω		
CKP sensor peak voltage	5.0 V and more		When cranking
IAP sensor input voltage	4.5 – 5.5 V		
IAP sensor output voltage	Approx. 2.63 V at idle speed		
TP sensor input voltage	4.5 – 5.5 V		
TP sensor output voltage	Closed	Approx. 1.1 V	
	Opened	Approx. 4.3 V	
ECT sensor input voltage	4.5 – 5.5 V		
ECT sensor output voltage	0.15 – 4.85 V		
ECT sensor resistance	Approx. 2.45 k Ω at 20 °C (68 °F)		
IAT sensor input voltage	4.5 – 5.5 V		
IAT sensor output voltage	0.15 – 4.85 V		
IAT sensor resistance	Approx. 1.60 k Ω at 20 °C (68 °F)		
TO sensor resistance	19 – 20 k Ω		
TO sensor voltage	Normal	0.4 – 1.4 V	
	Leaning	3.7 – 4.4 V	When leaning 65°
GP switch voltage	0.6 V and more		From 1st to Top
Injector voltage	Battery voltage		
Ignition coil primary peak voltage	80 V and more		When cranking
ISC valve resistance	Approx. 31 k Ω at 20 °C (68 °F)		

Throttle Body

Item	Specification
Bore size	42 mm
I.D. No.	31G0
Idle r/min	1 300 \pm 100 r/min
Fast idle r/min	1 500 – 2 000 r/min (When cold engine)
Throttle cable play	3 – 5 mm (0.12 – 0.20 in)

Electrical

Unit: mm (in)

Item		Specification		Note
Spark plug	Type	NGK: CR6E DENSO: U20ESR-N		
	Gap	0.7 – 0.8 (0.028 – 0.031)		
Spark performance		Over 8 (0.3) at 1 atm.		
CKP sensor resistance		150 – 250 Ω		
CKP sensor peak voltage		5.0 V and more		
Ignition coil resistance	Primary	0.1 – 0.6 Ω		Terminal – Ground
	Secondary	12 – 19 k Ω		Plug cap – Terminal
Ignition coil primary peak voltage		80 V and more		When cranking
Generator coil resistance		0.4 – 1.0 Ω		
Generator maximum output		Approx. 400 W at 5 000 r/min		
Generator no-load voltage (When engine is cold)		75 V (AC) and more at 5 000 r/min		
Regulated voltage		13.5 – 15.5 V at 5 000 r/min		
Starter motor brush length	Standard	12.0 (0.47)		
	Limit	6.5 (0.26)		
Starter torque limiter slip torque		41.2 – 62.8 N·m (4.2 – 6.4 kgf-m, 14.5 – 32.5 lbf-ft)		
Starter relay resistance		3 – 5 Ω		
Battery	Type designation	YTX20CH-BS		
	Capacity	12 V 64.8 kC (18 Ah)/10 HR		
Fuse size	Headlight HI	10 A		
	Headlight LO	10 A		
	Power source	10 A		
	Ignition	15 A		
	Fuel	10 A		
	Fan	15 A		
	Main	30 A		
		EPS		40 A

Wattage

Unit: W

Item		Specification	
		P-24, 28, 33	P-17
Headlight	HI	35 x 2	←
	LO	35 x 2	←
Auxiliary headlight		35/35	←
Brake light/Taillight		21/5	←
Reversing light		—	21
Speedometer light		LED	←
High beam indicator light		—	LED
Neutral indicator light		LED	←
FI indicator light/Engine coolant temp. indicator light		LED	←
Reverse indicator light		LED	←
Differential lock indicator light		LED	←
EPS indicator light		LED	←

0C-6 Service Data:**Brake + Wheel**

Unit: mm (in)

Item	Standard/Specification	Limit
Rear brake pedal height	12.5 – 22.5 (0.5 – 0.9)	—
Rear brake pedal free travel	20 – 30 (0.8 – 1.2)	—
Front brake disc thickness	—	3.0 (0.20)
Front brake disc runout	—	0.30 (0.012)
Front master cylinder bore	12.700 – 12.743 (0.5000 – 0.5017)	—
Front master cylinder piston diam.	12.657 – 12.684 (0.4983 – 0.4994)	—
Front brake caliper cylinder bore	33.960 – 34.010 (1.3370 – 1.3390)	—
Front brake caliper piston diam.	33.878 – 33.928 (1.3338 – 1.3357)	—
Rear brake lever play	6 – 8 (0.2 – 0.3)	—
Brake fluid type	DOT 4	—
Steering angle	46° (right & left)	—
Turning radius	3.1 m (10.2 ft)	—
Toe-out (With 75 kg, 165 lbs)	5 ± 4 mm (0.20 ± 0.16)	—
Camber	-1.3°	—
Caster	3.3°	—

Tire

Unit: mm (in)

Item	Standard	Limit
Cold inflation tire pressure (Solo riding)	Front 35 kPa (0.35 kgf/cm ² , 5.1 psi)	—
	Rear 30 kPa (0.30 kgf/cm ² , 4.4 psi)	—
Tire size	Front AT25 x 8-12 ☆☆, tubeless	—
	Rear AT25 x 10-12 ☆☆, tubeless	—
Tire tread depth	Front —	4.0 (0.16)
	Rear —	4.0 (0.16)

Suspension

Unit: mm (in)

Item	Standard	Limit
Front shock absorber spring adjustor	2/5 position	—
Rear shock absorber spring adjustor	2/5 position	—

Fuel + Oil

Item	Specification	Note
Fuel type	Use only unleaded gasoline of at least 87 pump octane (R/2 + M/2) or 91 octane or higher rated by the Research Method. Gasoline containing MTBE (Methyl Tertiary Butyl Ether), less than 10% ethanol, or less than 5% methanol with appropriate cosolvents and corrosion inhibitor is permissible.	P-28, 33
	Gasoline used should be graded 91 octane or higher. An unleaded gasoline type is recommended.	Others
Fuel tank capacity	17.5 L (4.6/3.8 US/Imp gal)	
Engine oil type	SAE 10 W-40, API SF/SG or SH/SJ with JASO MA	
Engine oil capacity	Change	2 300 ml (2.4/2.0 US/Imp qt)
	Filter change	2 500 ml (2.6/2.2 US/Imp qt)
	Overhaul	3 000 ml (3.2/2.6 US/Imp qt)

Tightening Torque List (LT-A750XP/ZK9)

B931G30307004

Engine

Item		N·m	kgf·m	lbf·ft
Spark plug		11	1.1	8.0
Cylinder head cover bolt	Initial	10	1.0	7.0
	Final	14	1.4	10.5
Cam drive idle gear/sprocket shaft		41	4.1	29.5
Intake pipe bolt		9	0.9	6.5
Cylinder head bolt (M6)		10	1.0	7.0
Cylinder head bolt (L200)	Initial	25	2.5	18.0
	Final	37	3.7	27.0
Cylinder head bolt (L: 70)		10	1.0	7.0
Cylinder head bolt (L: 100)		10	1.0	7.0
Camshaft journal holder bolt		10	1.0	7.0
Cam chain tension adjuster bolt		10	1.0	7.0
Cam chain tension adjuster cap bolt		7	0.7	5.0
Crankcase bolt (M6)		10	1.0	7.0
Crankcase bolt (M8)		26	2.6	19.0
Valve timing inspection plug		23	2.3	16.5
Clutch shoe nut		150	15.0	108.5
Movable drive face bolt		110	11.0	79.5
Movable driven face bolt		110	11.0	79.5
Movable driven face ring nut		110	11.0	79.5
V-belt outer cover bolt		8	0.8	6.0
V-belt inner cover bolt		9	0.9	6.5
Generator rotor nut		160	16.0	115.5
Generator stator set bolt		11	1.1	8.0
Speed sensor bolt		10	1.0	7.0
Starter clutch bolt		26	2.6	19.0
Exhaust pipe nut		23	2.3	16.5
Muffler connecting bolt		23	2.3	16.5
Muffler mounting bolt		23	2.3	16.5
Engine oil drain plug		21	2.1	15.0
Engine coolant drain plug		13	1.3	9.5
Drive bevel gear nut		100	10.0	72.5
Front output shaft nut		100	10.0	72.5
Engine mounting nut		60	6.0	43.5
Engine mounting damper stopper bolt		23	2.3	16.5
Rear output shaft nut		100	10.0	72.5
Crank balancer drive gear nut		150	15.0	108.5
Crank balancer driven gear bolt		50	5.0	36.0
Starter motor mounting bolt		10	1.0	7.0
Starter motor lead wire connecting nut		6	0.6	4.5
Starter motor housing bolt		5	0.5	3.5
Main oil gallery plug		18	1.8	13.0
Air cleaner box mounting bolt		4.5	0.45	3.0
Left crankshaft spacer nut		38	3.8	27.5
Oil gallery plug (Cylinder head)		10	1.0	7.0

0C-8 Service Data:**Drive Train**

Item	N-m	kgf-m	lbf-ft
4WD/Diff-lock actuator mounting bolt	22	2.2	16.0
Front drive (Differential) gear case bolt	22	2.2	16.0
Front drive (Differential) gear case mounting nut	50	5.0	36.0
Front drive (Differential) gear oil level plug	8.5	0.85	6.0
Front drive (Differential) gear oil filler plug	35	3.5	25.5
Front drive (Differential) gear oil drain plug	32	3.2	23.0
Final drive gear nut	100	10.0	72.5
Final drive gear bearing stopper	100	10.0	72.5
Final gear case bolt (M8)	26	2.6	19.0
Final gear case bolt (M10)	55	5.5	40.0
Final gear mounting nut	65	6.5	47.0
Final gear mounting bolt	65	6.5	47.0
Rear propeller shaft boot clamp screw	2	0.2	1.5
Final gear oil drain plug	23	2.3	16.5
Rear propeller shaft coupling nut	100	10.0	72.5
Front output shaft bolt	10	1.0	7.0
Rear output shaft nut	100	10.0	72.5
Rear output shaft drive bevel gear nut	100	10.0	72.5
Rear output shaft driven gear nut	100	10.0	72.5
Front propeller shaft boot clamp screw	1.3	0.13	1.0
Rear propeller shaft boot clamp screw	2	0.2	1.5

FI System, Intake Air System and Fuel System

Item	N-m	kgf-m	lbf-ft
CKP sensor mounting bolt	6	0.6	4.5
CKP sensor bracket bolt	6	0.6	4.5
Fuel delivery pipe mounting screw	5	0.5	3.5
Fuel pump retainer	35	3.5	25.5
ECT sensor	18	1.8	13.0
ISC valve mounting screw	2	0.2	1.5
TP sensor mounting screw	2	0.2	1.5

Cooling System

Item	N-m	kgf-m	lbf-ft
Water pump cover screw	6	0.6	4.5
Water pump mounting bolt	10	1.0	7.0
Cooling fan thermo-switch	17	1.7	12.5
Thermostat cover bolt	23	2.3	16.5
Cooling fan assembly mounting bolt	8.5	0.85	6.0
Water bypass union	12	1.2	8.5

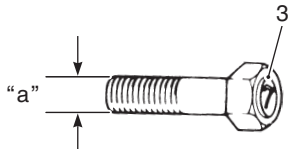
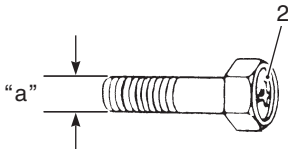
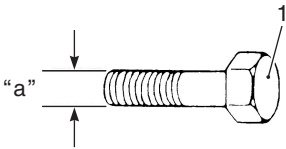
Chassis

Item	N·m	kgf·m	lbf·ft
Handlebar clamp bolt	26	2.6	19.0
Handlebar holder nut	60	6.0	43.5
Rear brake lever holder clamp bolt	10	1.0	7.0
Throttle lever case bolt	2	0.2	1.5
Steering shaft upper nut	120	12.0	87.0
Steering shaft bolt	26	2.6	19.0
EPS control unit mounting nut	12	1.2	8.5
EPS body assembly mounting bolt	26	2.6	19.0
EPS body assembly mounting nut	28	2.8	20.0
Steering shaft lower nut	162	16.2	117.0
Front suspension arm pivot nut (Upper)	60	6.0	43.5
Front suspension arm pivot nut (Lower)	65	6.5	47.0
Steering knuckle end nut (Upper and Lower)	29	2.9	21.0
Tie-rod end nut	29	2.9	21.0
Tie-rod lock-nut	29	2.9	21.0
Front shock absorber mounting bolt (Upper)	55	5.5	40.0
Front shock absorber mounting nut (Lower)	60	6.0	43.5
Front wheel hub nut	110	11.0	79.5
Rear wheel hub nut	121	12.1	87.5
Wheel set nut (Front and Rear)	60	6.0	43.5
Front brake hose union bolt	23	2.3	16.5
Front brake air bleeder valve	6	0.6	4.5
Front brake pad mounting pin	17	1.7	12.5
Front brake caliper mounting bolt	26	2.6	19.0
Caliper holder pin	18	1.8	13.0
Caliper holder slide pin	23	2.3	16.5
Brake pipe flare nut	16	1.6	11.5
Front brake disc mounting bolt	23	2.3	16.5
Brake master cylinder mounting bolt	10	1.0	7.0
Footrest mounting bolt (M8)	26	2.6	19.0
Footrest mounting bolt (M10)	55	5.5	40.0
Rear stabilizer joint nut	60	6.0	43.5
Rear shock absorber mounting nut (Upper and Lower)	60	6.0	43.5
Rear suspension arm pivot nut (Upper and Lower)	60	6.0	43.5
Rear knuckle end nut (Upper and Lower)	60	6.0	43.5
Rear brake cam lever nut	11	1.1	8.0
Rear brake case bolt	26	2.6	19.0
Rear brake pedal shaft nut	60	6.0	43.5
Rear brake pedal screw	4.5	0.45	3.0
Trailer towing bolt	60	6.0	43.5
Brake lever pivot bolt and nut	6	0.6	4.5
Brake lever pivot bolt lock-nut	6	0.6	4.5
Front propeller shaft boot clamp screw	1.3	0.13	1.0
Rear propeller shaft boot clamp screw	2	0.2	1.5

Tightening Torque Chart

For other bolts and nuts not listed in the preceding page, refer to this chart:

Bolt Diameter "a" (mm)	Conventional or "4" marked bolt			"7" marked bolt		
	N·m	kgf·m	lbf·ft	N·m	kgf·m	lbf·ft
4	1.5	0.15	1.0	2.3	0.23	1.5
5	3	0.3	2.0	4.5	0.45	3.0
6	5.5	0.55	4.0	10	1.0	7.0
8	13	1.3	9.5	23	2.3	16.5
10	29	2.9	21.0	50	5.0	36.0
12	45	4.5	32.5	85	8.5	61.5
14	65	6.5	47.0	135	13.5	97.5
16	105	10.5	76.0	210	21.0	152.0
18	160	16.0	115.5	240	24.0	173.5



I649G1030001-04

1. Conventional bolt	2. "4" marked bolt	3. "7" marked bolt
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SAMPLE

Section 1

Engine

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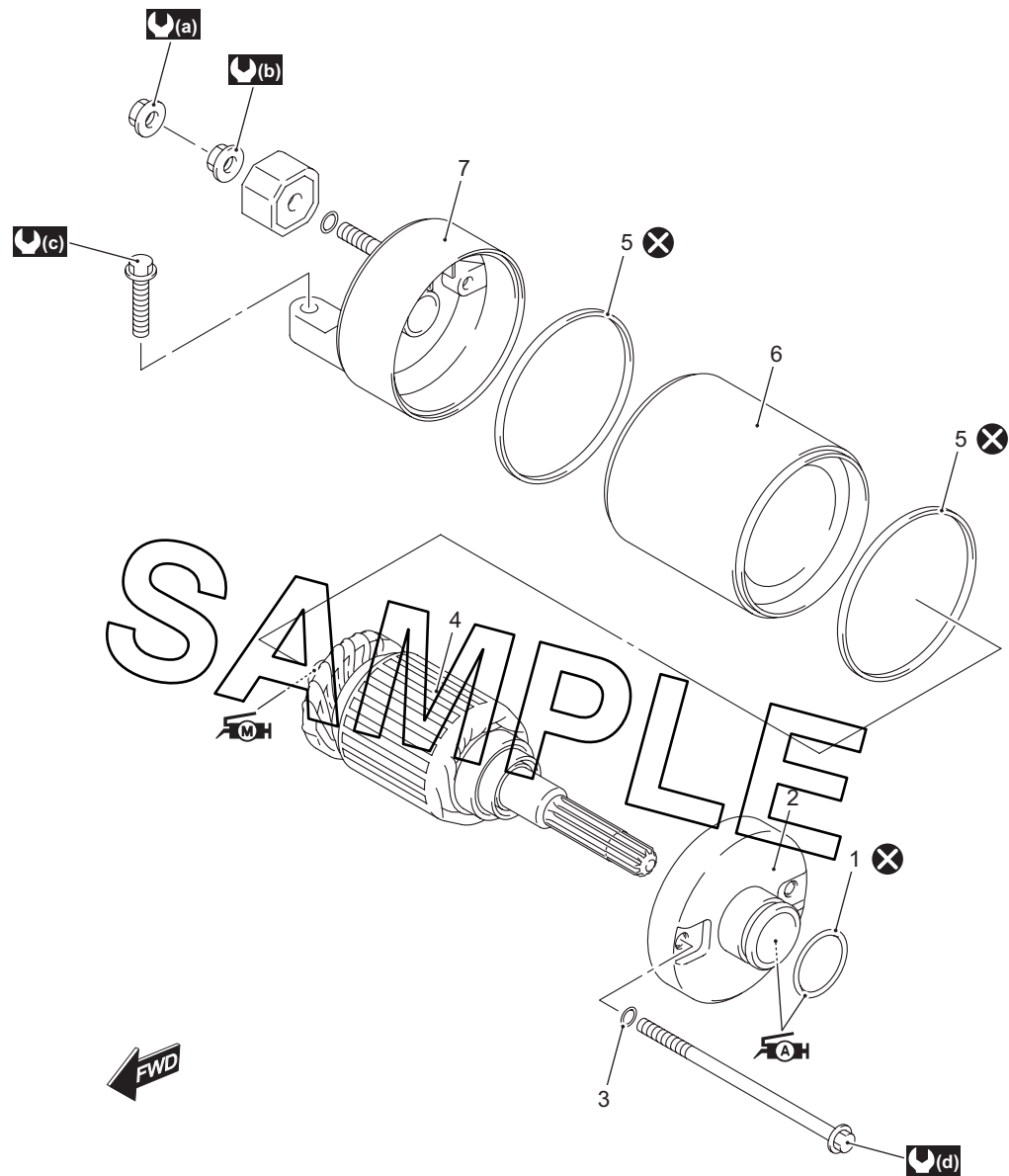
SAMPLE

Starting System

Repair Instructions

Starter Motor Components (LT-A750XP/ZK9)

B931G31906022



I931G3190012-03

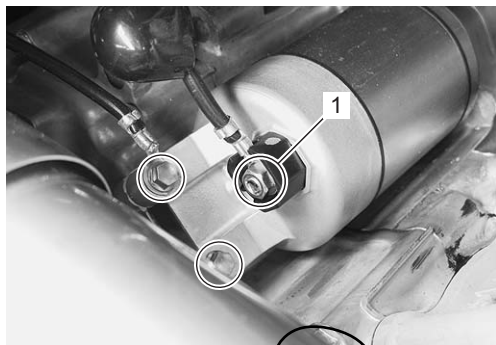
1. O-ring	6. Starter motor case	(d) : 5 N-m (0.5 kgf-m, 3.5 lbf-ft)
2. Housing end (Inside)	7. Housing end (Outside)	⚠ : Apply grease to sliding surface.
3. O-ring	(a) : 6 N-m (0.6 kgf-m, 4.5 lbf-ft)	⚠ : Apply moly paste to sliding surface.
4. Armature	(b) : 11 N-m (1.1 kgf-m, 8.0 lbf-ft)	⊗ : Do not reuse.
5. Square-ring	(c) : 10 N-m (1.0 kgf-m, 7.0 lbf-ft)	

Starter Motor Removal and Installation (LT-A750XP/ZK9)

B931G31906023

Removal

- 1) Turn the ignition switch OFF and disconnect the battery (–) lead wire. Refer to “Battery Removal and Installation (LT-A750XP/ZK9) in Section 1J (Page 1J-2)”.
- 2) Remove the right side cover. Refer to “Front Side Exterior Parts Removal and Installation in Section 9D in related manual”.
- 3) Remove the starter motor lead wire (1).



I931G3190001-02

- 4) Remove the starter motor.

Installation

Install the starter motor in the reverse order of removal. Pay attention to the following points:

- Apply grease to the starter motor O-ring.

 **Grease 99000–25010 (SUZUKI SUPER GREASE “A” or equivalent)**

CAUTION

Replace the O-ring with a new one.



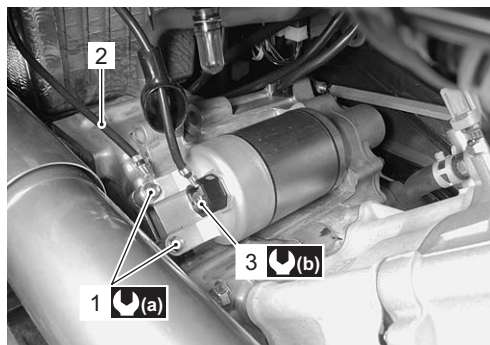
I931G3190002-02

- Tighten the starter motor mounting bolts (1) with the battery (–) lead wire (2) and starter motor lead wire mounting nut (3) to the specified torque. Refer to “Wiring Harness Routing Diagram (LT-A750XP/ZK9) in Section 9A (Page 9A-4)”.

Tightening torque

Starter motor mounting bolt (a): 10 N·m (1.0 kgf-m, 7.0 lbf-ft)

Starter motor lead wire mounting nut (b): 6 N·m (0.6 kgf-m, 4.5 lbf-ft)



I931G3190003-02

Starter Motor Disassembly and Assembly (LT-A750XP/ZK9)

B931G31906024

Refer to “Starter Motor Removal and Installation in related manual”.

Disassembly

Disassemble the starter motor as shown in the starter motor components diagram. Refer to “Starter Motor Components in related manual”.

Assembly

Reassemble the starter motor in the reverse order of removal. Pay attention to the following points:

CAUTION

Replace the O-rings with new ones to prevent oil leakage and moisture.


- Apply grease to the lip of the oil seal.

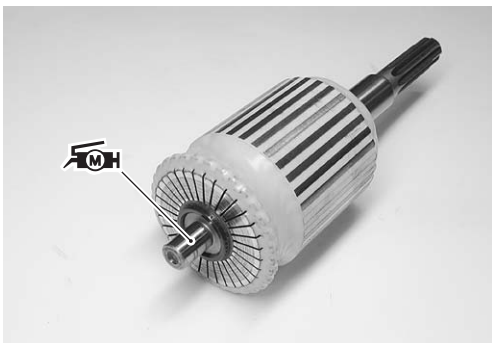
 **Grease 99000–25010 (SUZUKI SUPER GREASE “A” or equivalent)**



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- Apply a small quantity of moly paste to the armature shaft.

 **Moly paste 99000-25140 (SUZUKI Moly paste or equivalent)**



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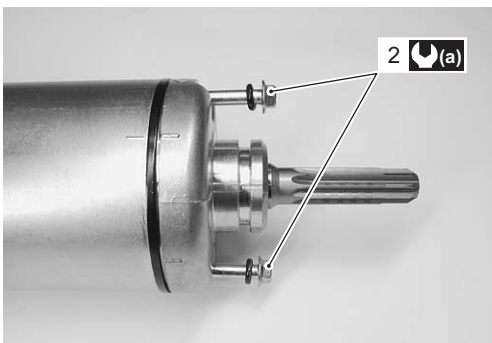
- Align the match mark on the starter motor case with the match mark on the housing end.
- Tighten the starter motor housing bolts (2) to the specified torque.

Tightening torque

Starter motor housing bolt (a): 5 N·m (0.5 kgf-m, 3.5 lbf-ft)



I931G3190006-02



I931G3190007-03

Starter Motor Related Parts Inspection (LT-A750XP/ZK9)

B931G31906025

Refer to "Starter Motor Disassembly and Assembly in related manual".

Carbon Brush

Inspect the carbon brushes for abnormal wear, cracks or smoothness in the brush holder.

If either carbon brush is defective, replace the brush holder set with a new one.

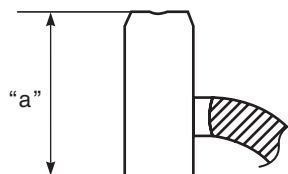
Measure the length "a" of the carbon brushes using a vernier calipers. If the measurement is less than the service limit, replace the housing end assembly with a new one.

Brush length "a"

Service limit: 6.5 mm (0.26 in)

Special tool

 : 09900-20102 (Vernier calipers (200 mm))



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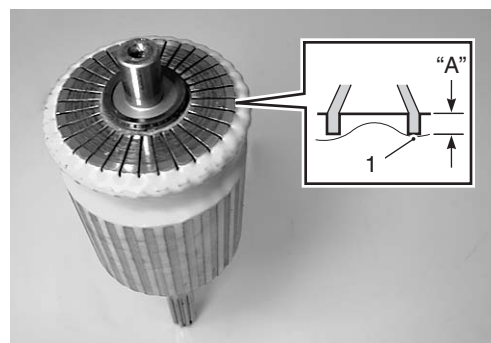
Commutator

Inspect the commutator for discoloration, abnormal wear or undercut "A".

If the commutator is abnormally worn, replace the armature.

If the commutator surface is discolored, polish it with #400 sandpaper and wipe it using a clean, dry cloth.

If there is no undercut, scrape out the insulator (1) with a saw blade.



I931G3190008-02


11-4 Starting System:

Armature Coil

Measure for continuity between each segment. Measure for continuity between each segment and the armature shaft.

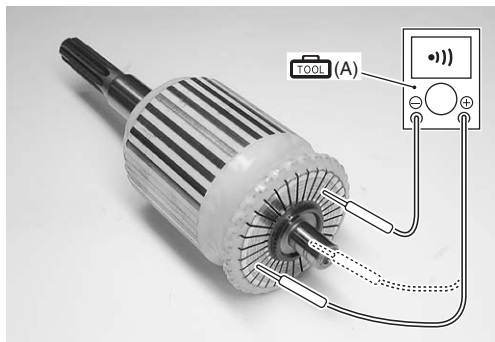
If there is no continuity between the segments or there is continuity between the segments and shaft, replace the armature with a new one.

Special tool

 (A): 09900-25008 (Multi circuit tester set)

Tester knob indication

Continuity set (•)))



I931G3190009-02

Bearing

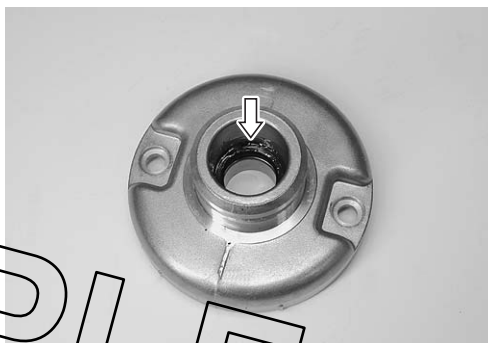
Check the bearing of housing end for damage. If any damage is found, replace the housing end.



I931G3190010-02

Oil Seal

Check the seal lip for damage. If any damage is found, replace the housing end (Inside).



I931G3190011-02

SAMPLE

Specifications

Service Data (LT-A750XP/ZK9)

B931G31907003

Unit: mm (in)

Item	Specification		Note
Starter motor brush length	Standard	12.0 (0.47)	
	Limit	6.5 (0.26)	
Starter torque limiter slip torque	Standard	41.2 – 62.8 N·m (4.2 – 6.4 kgf-m, 14.5 – 32.5 lbf-ft)	
Starter relay resistance		3 – 5 Ω	

Tightening Torque Specifications

B931G31907004

Fastening part	Tightening torque			Note
	N·m	kgf-m	lbf-ft	
Starter motor mounting bolt	10	1.0	7.0	☞ (Page 11-2)
Starter motor lead wire mounting nut	6	0.6	4.5	☞ (Page 11-2)
Starter motor housing bolt	5	0.5	3.5	☞ (Page 11-3)

NOTE

The specified tightening torque is described in the following.
 “Starter Motor Components (LT-A750XP/ZK9) (Page 11-1)”

Reference:

For the tightening torque of fastener not specified in this section, refer to “Tightening Torque List (LT-A750XP/ZK9) in Section 0C (Page 0C-7)”.
 SAMPLE
 Special Tools and Equipment

Recommended Service Material

B931G31908001

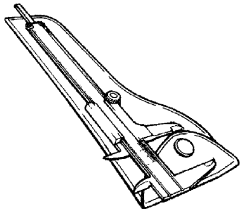

Material	SUZUKI recommended product or Specification		Note
Grease	SUZUKI SUPER GREASE “A” or equivalent	P/No.: 99000–25010	☞ (Page 11-2) / ☞ (Page 11-2)
Moly paste	SUZUKI Moly paste or equivalent	P/No.: 99000–25140	☞ (Page 11-3)

NOTE

Required service material is also described in the following.
 “Starter Motor Components (LT-A750XP/ZK9) (Page 11-1)”

Special Tool

B931G31908002

09900–20102 Vernier calipers (200 mm) ☞ (Page 11-3)		09900–25008 Multi circuit tester set ☞ (Page 11-4)	
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Charging System

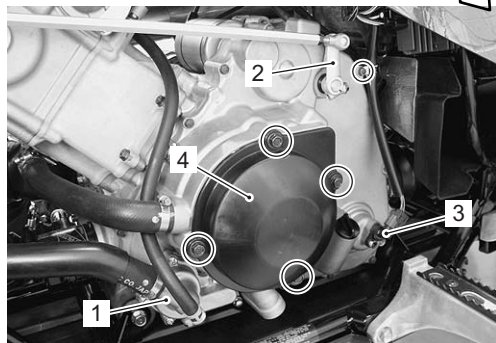
Repair Instructions

Generator Removal and Installation (LT-A750XP/ZK9)

B931G31A06010

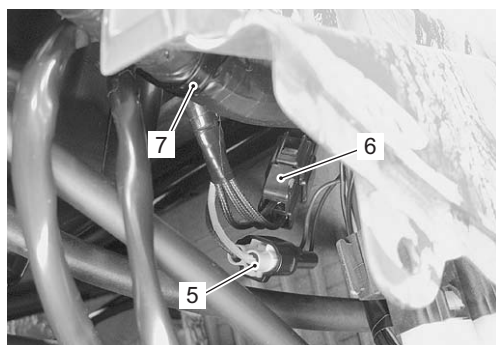
Removal

- 1) Disconnect the (–) battery lead wire. Refer to “Battery Removal and Installation (LT-A750XP/ZK9) (Page 1J-2)”.
- 2) Drain engine oil. Refer to “Engine Oil and Filter Replacement in Section 0B in related manual”.
- 3) Remove the left inner fender. Refer to “Front Side Exterior Parts Removal and Installation in Section 9D in related manual”.
- 4) Remove the left mud guard. Refer to “Rear Side Exterior Parts Removal and Installation in Section 9D in related manual”.
- 5) Drain engine coolant. Refer to “Cooling System Inspection in Section 0B in related manual”.
- 6) Remove the water pump assembly (1). Refer to “Water Pump Removal and Installation in Section 1F in related manual”.
- 7) Disconnect the gearshift lever arm (2) and speed sensor coupler (3).
- 8) Remove the recoil cover (4).



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- 9) Disconnect the CKP sensor coupler (5) and generator coupler (6) and remove the clamp (7).



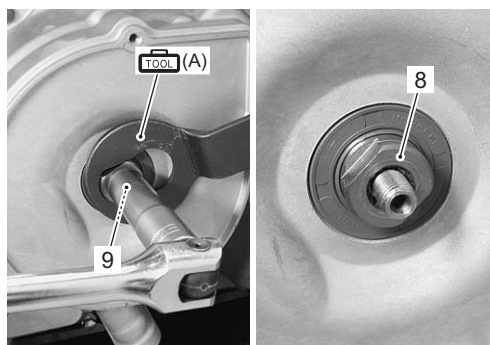
I931G31A0008-01

- 10) Hold the left crankshaft spacer (8) with the special tool.

Special tool

TOOL (A): 09930-44530 (Rotor holder)

- 11) Remove the left crankshaft spacer nut (9) and spacer (8).



I931G31A0002-01

- 12) Remove the generator cover. Refer to “Generator Removal and Installation in related manual”.

Installation

Install the generator in the reverse order of removal. Pay attention to the following points:

- Install the generator cover. Refer to “Generator Removal and Installation in related manual”.

⚠ WARNING

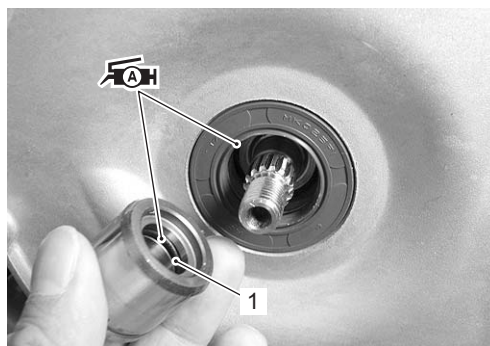
Be careful not to pinch the finger between the generator cover and the crankcase.

- Apply grease to the O-ring (1) and oil seal lip.

⚠ : Grease 99000-25010 (SUZUKI SUPER GREASE “A” or equivalent)

⚠ CAUTION

Replace the O-ring (1) with a new one.



I931G31A0003-01

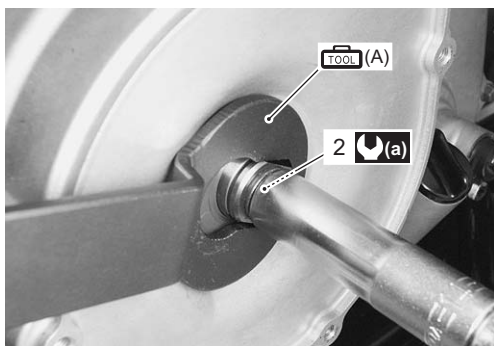
- Tighten the crankshaft spacer nut (2) to the specified torque with the special tool.

Special tool

 (A): 09930-44530 (Rotor holder)

Tightening torque

Left crankshaft spacer nut (a): 38 N·m (3.8 kgf-m, 27.5 lbf-ft)



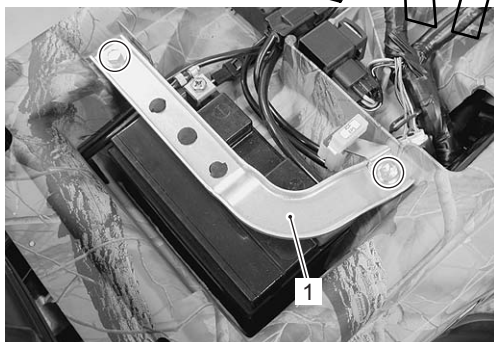
I931G31A0004-01

Battery Removal and Installation (LT-A750XP/ZK9)

B931G31A06011

Removal

- 1) Remove the seat. Refer to "Seat Removal and Installation in Section 9D in related manual"
- 2) Remove the battery stay (1).



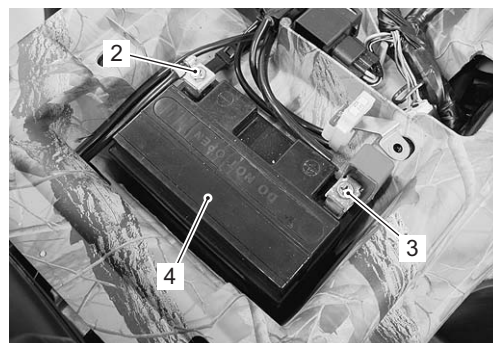
I931G31A0005-01

- 3) Disconnect the battery (-) lead wire (2).
- 4) Disconnect the battery (+) lead wire (3).

NOTE

Be sure to disconnect the battery (-) lead wire (2) first, then disconnect the battery (+) lead wire (3).

- 5) Remove the battery (4).



I931G31A0006-01

Installation

Install the battery in the reverse order of removal. Pay attention to following point:

⚠ CAUTION

Never use anything except the specified battery.

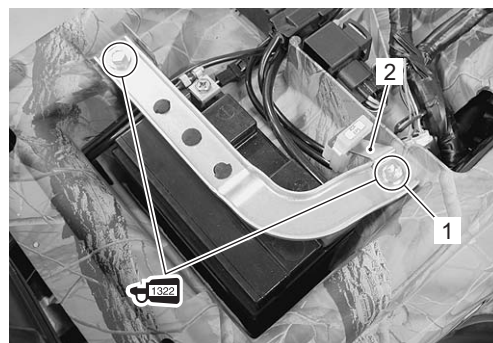
- Tighten the battery mounting bolts securely.

NOTE

Fit the EPS fuse bracket (2) to the mounting bolt (1).

- Apply thread lock to the battery stay mounting bolts and tighten them securely.

 : Thread lock cement 99000-32110 (THREAD LOCK CEMENT SUPER "1322" or equivalent)



I931G31A0007-02

Specifications

Tightening Torque Specifications

B931G31A07002

Fastening part	Tightening torque			Note
	N·m	kgf-m	lbf-ft	
Left crankshaft spacer nut	38	3.8	27.5	☞ (Page 1J-2)

Reference:

For the tightening torque of fastener not specified in this section, refer to “Tightening Torque List (LT-A750XP/ZK9) in Section 0C (Page 0C-7)”.

Special Tools and Equipment

Recommended Service Material

B931G31A08001

Material	SUZUKI recommended product or Specification		Note
Grease	SUZUKI SUPER GREASE “A” or equivalent	P/No.: 99000–25010	☞ (Page 1J-1)
Thread lock cement	THREAD LOCK CEMENT SUPER “1322” or equivalent	P/No.: 99000–32110	☞ (Page 1J-2)

Special Tool

B931G31A08002

09930–44530 Rotor holder ☞ (Page 1J-1) / ☞ (Page 1J-2)	
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Section 3

Driveline / Axle

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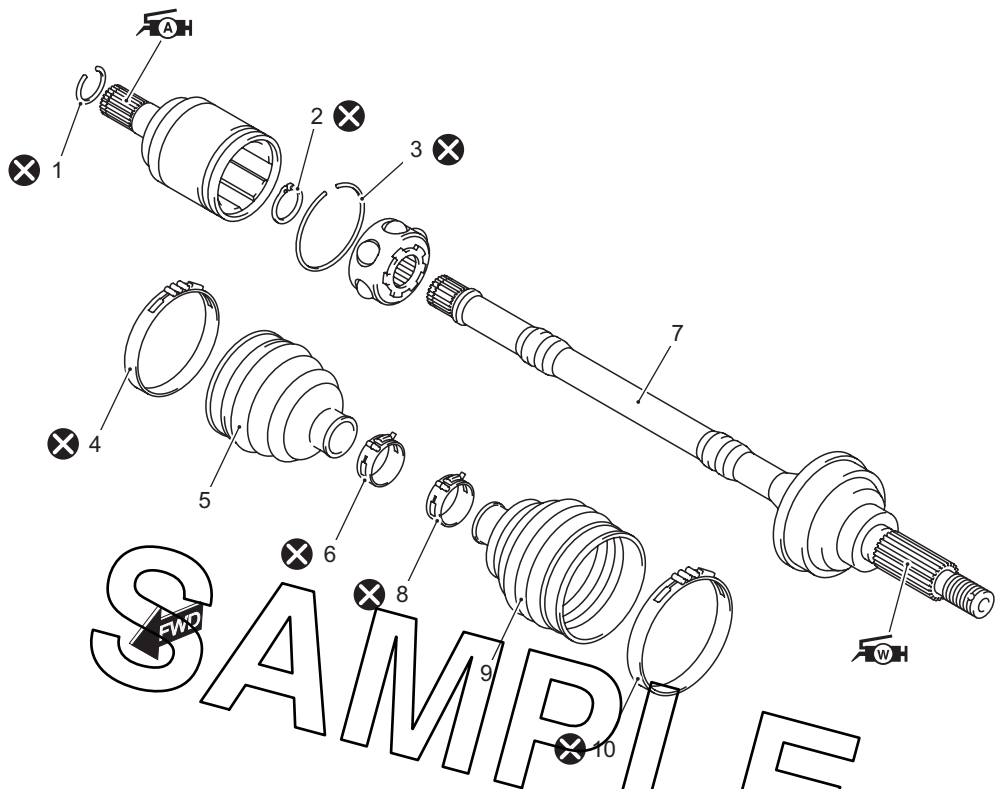
SAMPLE

Drive Chain / Drive Train / Drive Shaft




Repair Instructions

Front Drive Shaft Components (LT-A750XP/ZK9)

B931G33106009



I931H1310012-03

1. Circlip	6. Inner boot band (Small)	 Apply grease.
2. Snap ring	7. Drive shaft	 Apply water resistance grease.
3. Stopper ring	8. Outer boot band (Small)	 Do not reuse.
4. Inner boot band (Large)	9. Outer boot	
5. Inner boot	10. Outer boot band (Large)	

Front Drive Shaft Disassembly and Assembly (LT-A750XP/ZK9)

B931G33106011

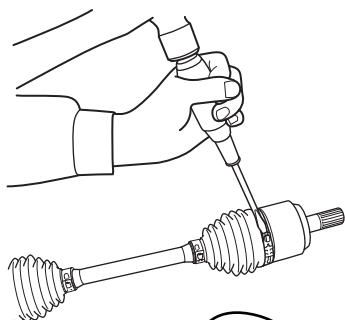
Refer to "Front Drive Shaft Assembly Removal and Installation in related manual".

Disassembly

⚠ CAUTION

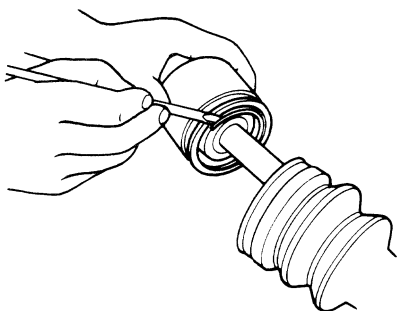
Do not disassemble the wheel side joint. If any damages are found, replace it with a new one.

- 1) Remove the boot band of the differential side joint.



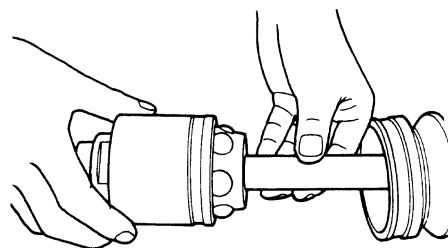
I931H1310003-03

- 2) Slide the boot toward the center of the front drive shaft and remove the stopper ring from the outer race.



I831G1310006-01

- 3) Remove the outer race from the front drive shaft.

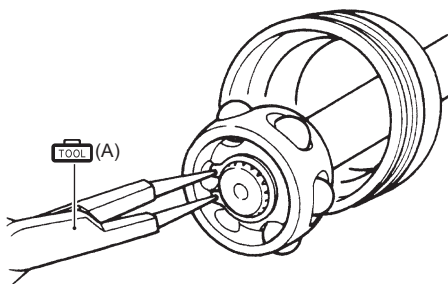


I831G1310007-01

- 4) Wipe off any grease and remove the snap ring.

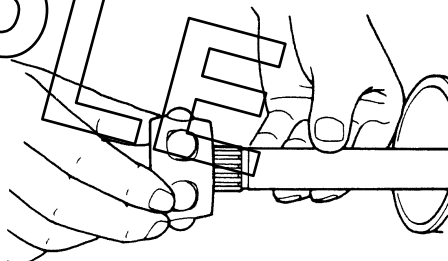
Special tool

TOOL (A): 09900-06107 (Snap ring remover (Open type))



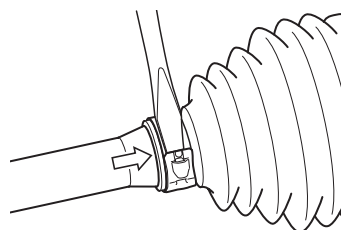
I831G1310022-01

- 5) Remove the cage from the front drive shaft.



I831G1310009-01

- 6) Remove the boot band of the small diameter side.



I931H1310004-02

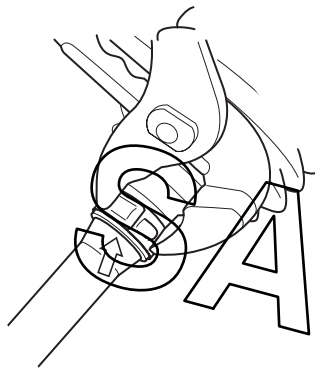
Assembly**⚠ CAUTION**

- Wash all parts before installation, clean the inside and outside of the boots with a cloth.
- Do not wash the boots in any commercially available degreaser, such as gasoline or kerosene. Washing in a degreaser causes deterioration of the boots.

- 1) Fit a boot on the drive shaft end, fitting the small diameter side of the boot to the shaft groove, fix its end with a new boot band.

⚠ CAUTION

Replace the boot band with a new one.

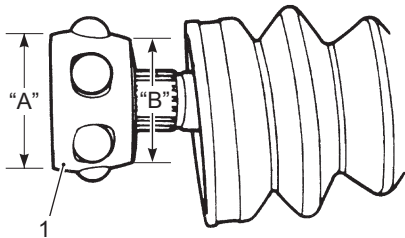


I831H1310005-02

- 2) Install the cage (1) on the shaft.

⚠ CAUTION

Install the cage with the large diameter side "A" facing the shaft end.



I831G1310012-02

"A": Large diameter


"B": Small diameter

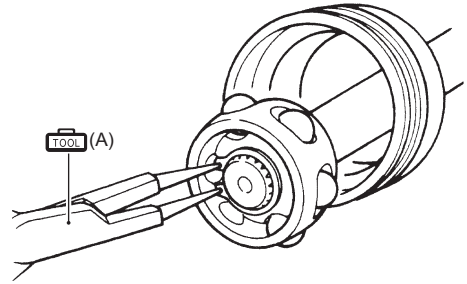
- 3) Install the new snap ring to the cage.

⚠ CAUTION

Replace the snap ring with a new one.

Special tool

 (A): 09900-06107 (Snap ring remover (Open type))



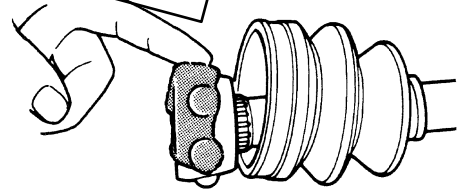
I831G1310023-01

- 4) Apply grease to the entire surface of the cage and the inside of the outer race.

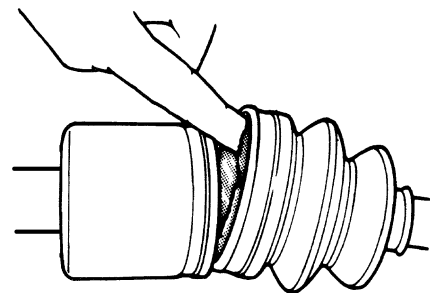
	Position	
	Wheel side	Differential side
Grease: Quantity	60 g (2.1 oz)	60 g (2.1 oz)

NOTE

The tube of joint grease is included in the wheel side boot set or wheel side joint assembly of spare parts.



I831G1310013-01



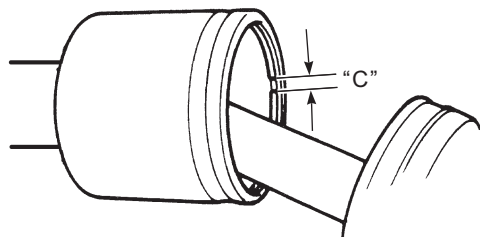
I831G1310014-01

3A-4 Drive Chain / Drive Train / Drive Shaft:

- 5) Insert the cage into the outer race and install the new stopper ring to the groove of the outer race.

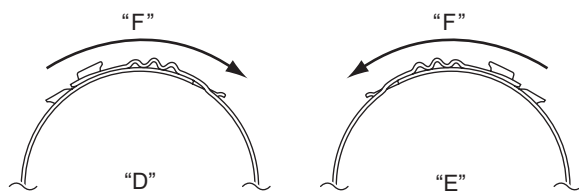
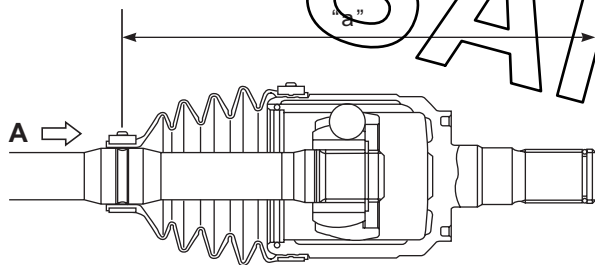
⚠ CAUTION

- Replace the stopper ring with a new one.
- Position the opening of stopper ring "C" so that it will not be lined up with a ball.



I831G1310015-01

- 6) After installing the boot on the outer race, insert a screw driver into the boot on the outer race side and allow air to enter the boot so that the air pressure in the boot becomes the same as the atmospheric pressure at the positions indicated in the figure.
- 7) Fix the boot on the outer race with a new boot band, taking care not to distort the boot.



VIEW A

I931H1310006-03

"D": Right side	"F": Rotation direction
"E": Left side	"a": 182.1 mm (7.2 in)

- 8) Install the circlip (2) into the groove of front drive shaft spline.

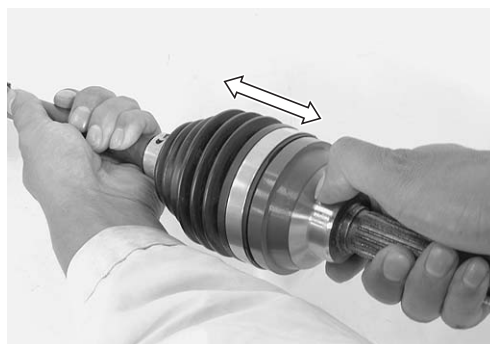
⚠ CAUTION

The removed circlip must be replaced with a new one.



I931H1310007-01

- 9) Inspect the axle play by using a push-and-pull motion given to the axle shaft and wheel spindle.



I931H1310008-01

Front Drive Shaft Inspection (LT-A750XP/ZK9)

B931G33106012

Inspect the front drive shaft in the following procedures:

- 1) Remove the front drive shaft assembly. Refer to "Front Drive Shaft Assembly Removal and Installation in related manual".
- 2) Check the drive shaft boots for twist and grease leak. If any defects are found, replace the defective parts with new ones.
- 3) Inspect the boots, circlip and boot bands for wear or damage. If any damages are found, replace them with new ones.

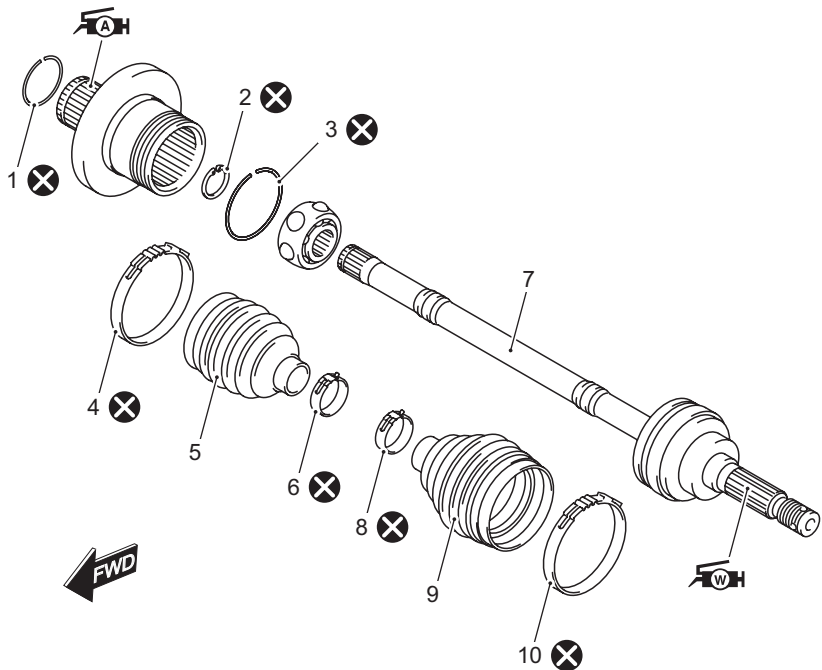


I931H1310009-01

- 4) Install the front drive shaft assembly. Refer to "Front Drive Shaft Assembly Removal and Installation in related manual".

Rear Drive Shaft Components (LT-A750XP/ZK9)

B931G33106013



I931H1310013-04

1. Circlip	6. Inner boot band (Small)	: Apply grease.
2. Snap ring	7. Drive shaft	: Apply water resistance grease.
3. Stopper ring	8. Outer boot band (Small)	: Do not reuse.
4. Inner boot band (Large)	9. Outer boot	
5. Inner boot	10. Outer boot band (Large)	

Rear Drive Shaft Disassembly and Assembly (LT-A750XP/ZK9)

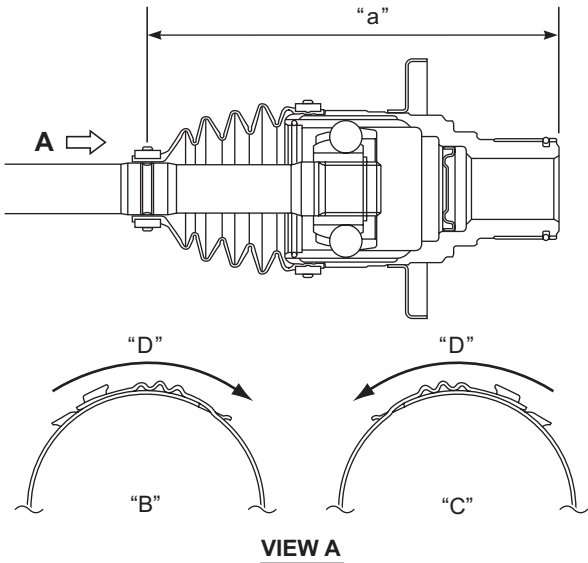
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Refer to “Rear Drive Shaft Assembly Removal and Installation in related manual”.
Rear drive shaft disassembly and assembly are the same manner of front drive shaft disassembly and assembly except for the position of inner boot band.

Rear Drive Shaft Inspection (LT-A750XP/ZK9)

B931G33106016

Refer to “Rear Drive Shaft Assembly Removal and Installation in related manual”.
Rear drive shaft inspection as the same manner of front drive shaft.



I931G3310001-01

“B”: Right side	“D”: Rotation direction
“C”: Left side	“a”: 166 mm (6.5 in)

Special Tools and Equipment

Recommended Service Material

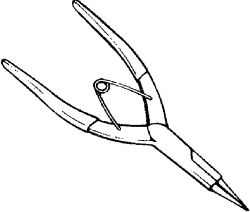
B931G33108001

NOTE

Required service material is also described in the following.
“Front Drive Shaft Components (LT-A750XP/ZK9) (Page 3A-1)”
“Rear Drive Shaft Components (LT-A750XP/ZK9) (Page 3A-5)”

Special Tool

B931G33108002

09900-06107 Snap ring remover (Open type) ⌘ (Page 3A-2) / ⌘ (Page 3A- 3)		
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SAMPLE

Section 4

Brake

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NOTE

For the items with asterisk (*) in the “CONTENTS” below, refer to the same section of the service manual mentioned in the “FOREWORD” of this manual.

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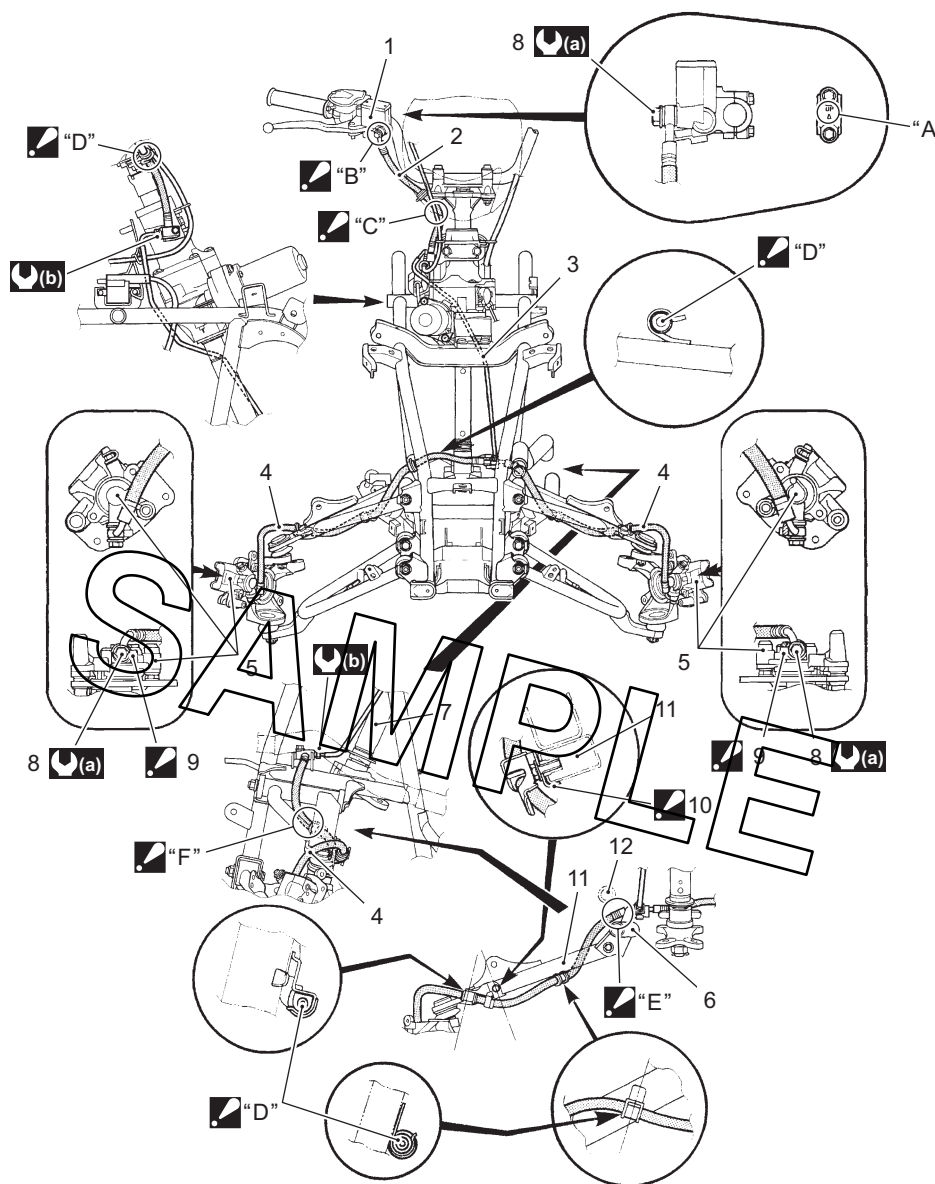
SAMPLE

Brake Control System and Diagnosis

Schematic and Routing Diagram

Front Brake Hose Routing Diagram (LT-A750XP/ZK9)

B931G34102003



I931H1410043-05

1. Master cylinder	11. Suspension upper arm
2. Front brake hose No. 1	12. Radiator hose
3. Front brake pipe	"A": UP mark
4. Front brake hose No. 2	▣ "B": After the brake hose union has contacted the reservoir bottom.
5. Front brake caliper	▣ "C": Pass the brake hose behind the throttle cable.
6. Frame	▣ "D": Fix the brake hose to the it guide firmly.
7. Steering shaft	▣ "E": Pass the brake hose No. 2 between the radiator lower hose and frame.
8. Union bolt	▣ "F": Pass the brake hose inside of the suspension arm.
▣ 9. Stopper : After the brake hose union has contacted the stopper, tighten the union bolt.	⚙ (a) : 23 N·m (2.3 kgf-m, 16.5 lbf-ft)
▣ 10. Stopper : After the brake hose clamp has contacted the suspension upper arm, tighten the stopper bolt.	⚙ (b) : 16 N·m (1.6 kgf-m, 11.5 lbf-ft)

Repair Instructions

Front Brake Hose Removal and Installation (LT-A750XP/ZK9)

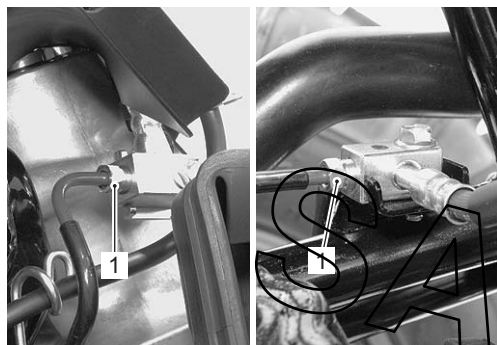
B931G34106019

Removal

CAUTION

Make sure that the vehicle is supported securely.

- 1) Remove the front fender. Refer to "Front Side Exterior Parts Removal and Installation in Section 9D in related manual".
- 2) Drain brake fluid. Refer to "Brake Fluid Replacement in related manual".
- 3) Loosen the flare nuts (1) and disconnect the brake pipe.



I931G3410001-02

- 4) Remove the front brake hoses as shown in the front brake hose routing diagram. Refer to "Front Brake Hose Routing Diagram (LT-A750XP/ZK9) (Page 4A-1)".

Installation

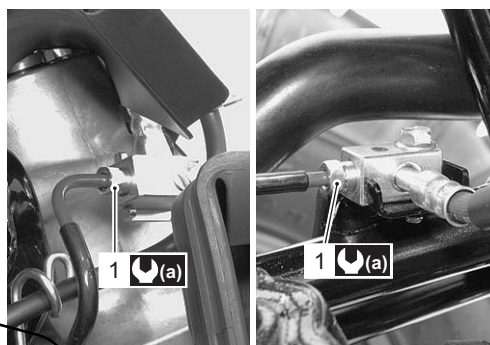
CAUTION

The seal washers should be replaced with the new ones to prevent fluid leakage.

- 1) Install the front brake hose as shown in the front brake hose routing diagram. Refer to "Front Brake Hose Routing Diagram in related manual".
- 2) Tighten the brake flare nut (1) to the specified torque.

Tightening torque

Brake pipe flare nut (a): 16 N·m (1.6 kgf-m, 11.5 lbf-ft)

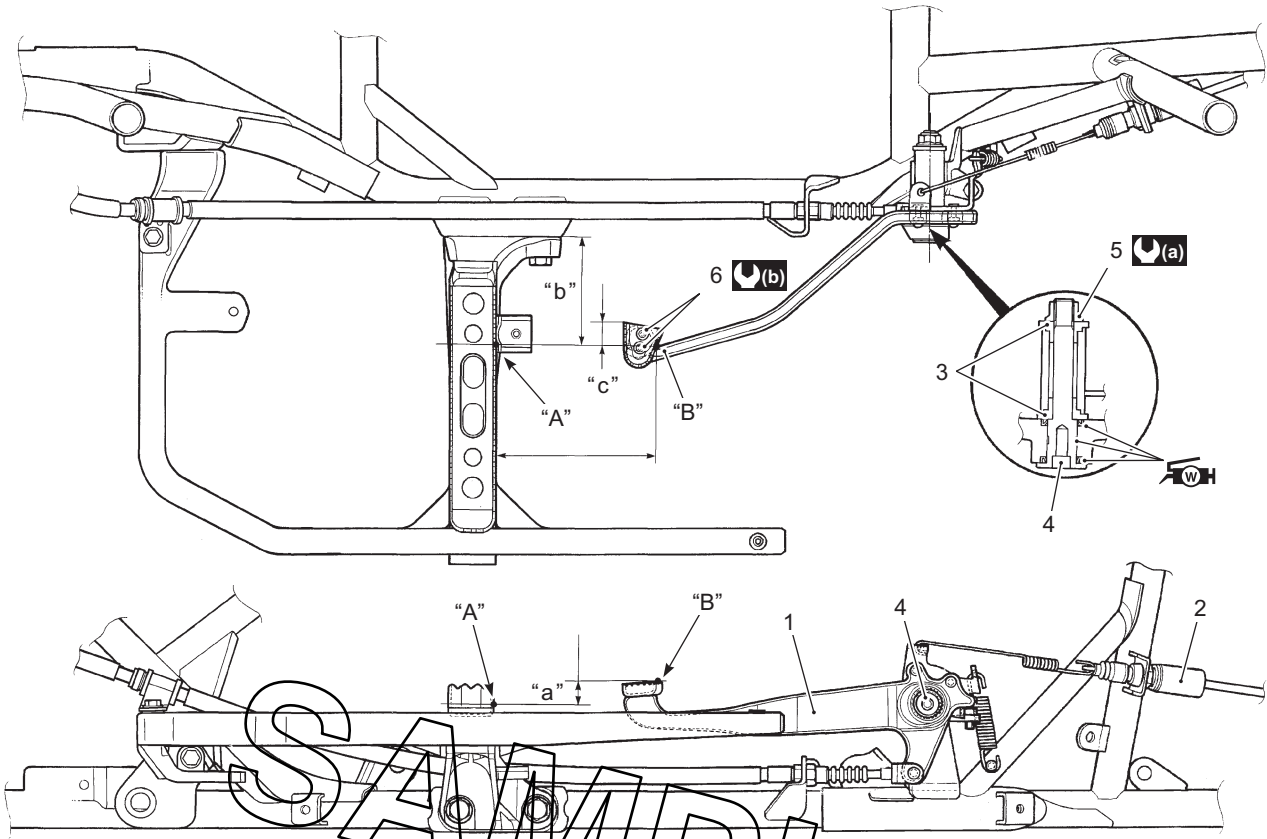


I931G3410009-01

- 3) Bleed air from the front brake system. Refer to "Air Bleeding from Front Brake Fluid Circuit in related manual".
- 4) Install the front fender. Refer to "Front Side Exterior Parts Removal and Installation in Section 9D in related manual".

Rear Brake Pedal Construction (LT-A750XP/ZK9)

B931G34106020



I931G3410002-01

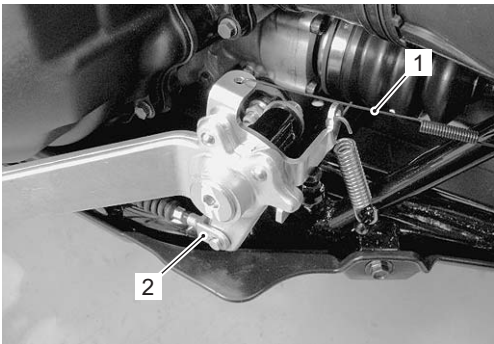
1. Rear brake pedal	6. Rear brake pedal screw	"B": Anchoring point (Pedal side)
2. Rear brake light switch	"a": 12.5 – 22.5 mm (0.49 – 0.89 in)	(a) : 60 N·m (6.0 kgf·m, 43.5 lbf·ft)
3. Washer	"b": 83.2 mm (3.28 in)	(b) : 4.5 N·m (0.45 kgf·m, 3.0 lbf·ft)
4. Rear brake pedal shaft	"c": 17.5 mm (0.69 in)	WH : Apply water resistance grease.
5. Rear brake pedal shaft nut	"A": Anchoring point (Footrest side)	

Rear Brake Pedal Removal and Installation (LT-A750XP/ZK9)

B931G34106021

Removal

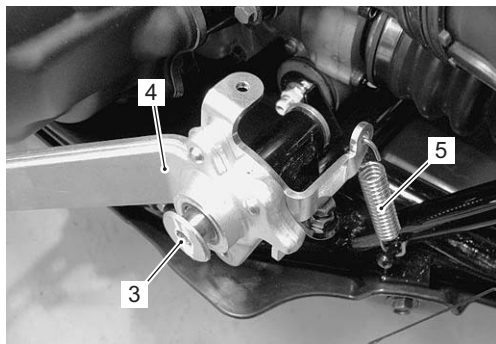
- 1) Remove the right inner fender. Refer to "Front Side Exterior Parts Removal and Installation in Section 9D in related manual".
- 2) Remove the right mud guard. Refer to "Rear Side Exterior Parts Removal and Installation in Section 9D in related manual".
- 3) Remove the rear brake light switch spring (1).
- 4) Disconnect the rear brake cable (2). Refer to "Rear Brake Cable Removal and Installation in related manual".



I931G3410003-02

4A-4 Brake Control System and Diagnosis:

- 5) Remove the rear brake pedal shaft (3).
- 6) Remove the rear brake pedal (4) and rear brake pedal spring (5).

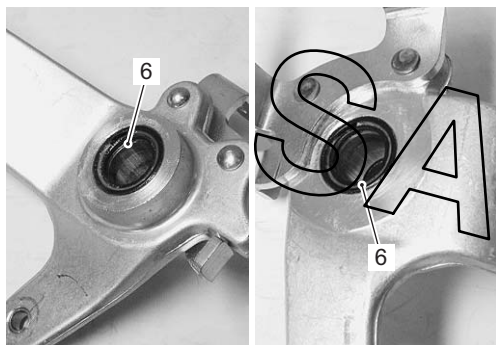


I931G3410010-01

- 7) Remove the dust seals (6) if necessary.

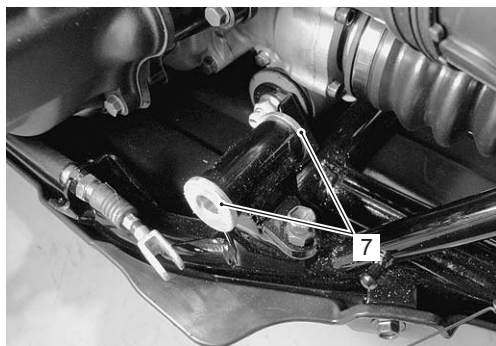
⚠ CAUTION

If there are wear or damage, replace the dust seals (6) with new ones.



I931G3410004-01

- 8) Remove the washers (7).



I931G3410005-01

Installation

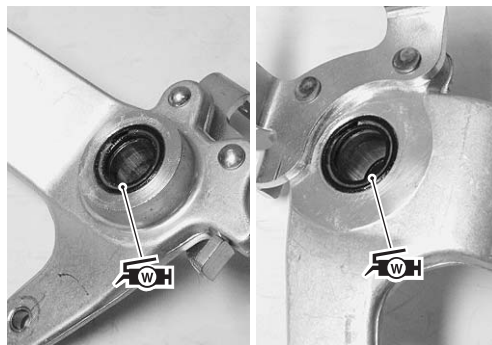
Install the rear brake pedal in the reverse order of removal. Pay attention to the following points:

- Apply grease to the lip of dust seals and washers.

⚠ CAUTION

Never reuse the removed dust seals with new ones.

🔧 : Grease 99000-25160 (Water resistance grease or equivalent)



I931G3410006-02

- Apply grease to the rear brake pedal shaft (1).

🔧 : Grease 99000-25160 (Water resistance grease or equivalent)

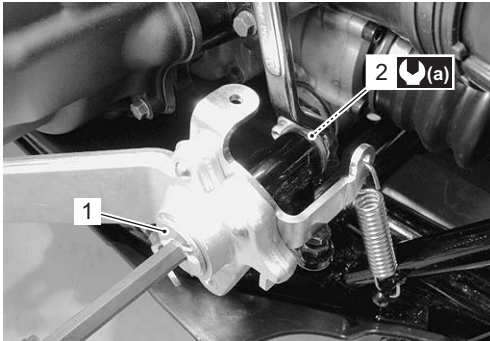


I931H1410035-01

- Install the rear brake pedal shaft (1) and tighten the brake pedal shaft nut (2) to the specified torque.

Tightening torque

Rear brake pedal shaft nut (a): 60 N·m (6.0 kgf-m, 43.5 lbf-ft)



I931G3410007-01

- After installed rear brake cable, adjust the adjuster nut. Refer to “Rear Brake Pedal / Rear Brake (Parking Brake) Lever Inspection and Adjustment in Section 0B in related manual”.
- Install the removed parts.

Specifications

Tightening Torque Specifications

B931G34107002

Fastening part	Tightening torque			Note
	N·m	kgf-m	lbf-ft	
Brake pipe flare nut	16	1.6	11.5	☞ (Page 4A-2)
Rear brake pedal shaft nut	60	6.0	43.5	☞ (Page 4A-5)

NOTE

The specified tightening torque is described in the following.
 “Front Brake Hose Routing Diagram (LT-A750XP/ZK9) (Page 4A-1)”
 “Rear Brake Pedal Construction (LT-A750XP/ZK9) (Page 4A-3)”

Reference:

For the tightening torque of fastener not specified in this section, refer to “Tightening Torque List (LT-A750XP/ZK9) in Section 0C (Page 0C-7)”.

Special Tools and Equipment

Recommended Service Material

B931G34108003

Material	SUZUKI recommended product or Specification		Note
Grease	Water resistance grease or equivalent	P/No.: 99000-25160	☞ (Page 4A-4) / ☞ (Page 4A-4)

NOTE

Required service material is also described in the following.
 “Rear Brake Pedal Construction (LT-A750XP/ZK9) (Page 4A-3)”

SAMPLE

Section 6

Steering

CONTENTS

NOTE

For the items with asterisk (*) in the “CONTENTS” below, refer to the same section of the service manual mentioned in the “FOREWORD” of this manual.

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SAMPLE

Precautions

Precautions

Precautions for Steering (LT-A750XP/ZK9)

B931G36000002

Refer to “General Precautions in Section 00 in related manual” and “Precautions for EPS (LT-A750XP/ZK9) in Section 00 (Page 00-1)”.

SAMPLE

Steering General Diagnosis

Diagnostic Information and Procedures

Steering Symptom Diagnosis (LT-A750XP/ZK9)

B931G36104002

Condition	Possible cause	Correction / Reference Item
Heavy Steering	Distorted steering shaft.	<i>Replace.</i>
	Improper front wheel alignment.	<i>Adjust.</i>
	Insufficiently lubricated.	<i>Lubricate.</i>
	Not enough pressure in tires.	<i>Adjust.</i>
	Worn or incorrect tire or wrong tire pressure.	<i>Adjust or replace.</i>
	Malfunctioning EPS, if equipped.	Inspect EPS system.
Wobbly Handlebars	Distorted front steering shaft.	<i>Replace.</i>
	Crooked tire.	<i>Replace.</i>
	Worn or incorrect tire or wrong tire pressure.	<i>Adjust or replace.</i>
	Worn bearing/race in steering stem.	<i>Replace.</i>
	Worn steering shaft holder bushing.	<i>Replace.</i>
	Worn steering knuckle ends or ball stud.	<i>Replace.</i>
	Worn front wheel hub bearings.	<i>Replace.</i>

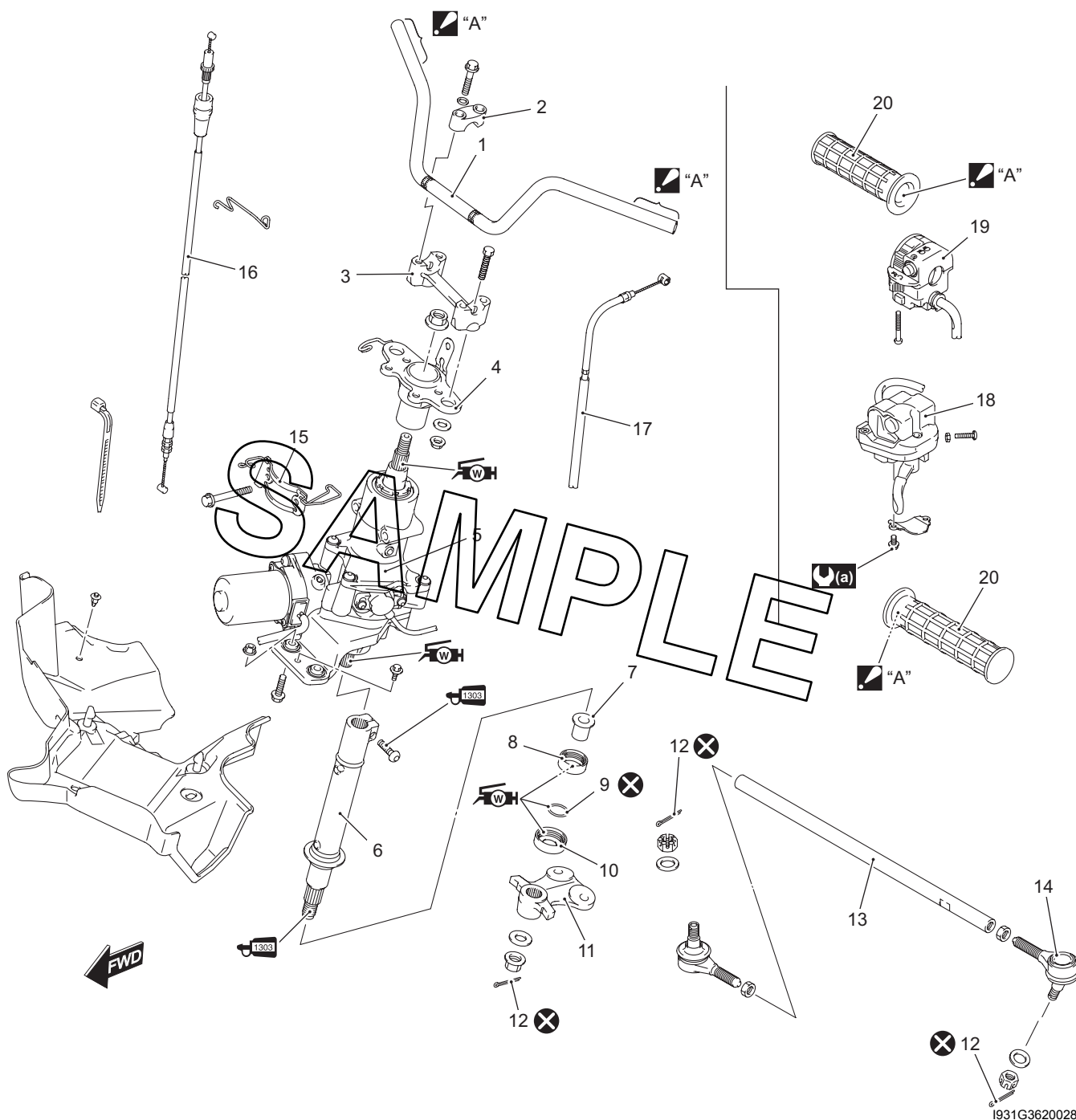
SAMPLE

Steering / Handlebar

Repair Instructions










Steering / Handlebars Components (LT-A750XP/ZK9)

B931G36206008



I931G3620028-02

1. Handlebars	10. Lower dust seal	19. Handlebar left switch assembly
2. Handlebar upper clamp	11. Steering arm plate	20. Handle grip
3. Handlebar holder	12. Cotter pin	▲ "A": Apply grip bond.
4. Steering shaft plate	13. Tie-rod	⚙️ (a) : 4 N·m (0.4 kgf-m, 3.0 lbf-ft)
5. EPS body assembly	14. Tie-rod end	🔒 1303 : Apply thread lock to the thread part.
6. Steering shaft	15. Cable guide	🛢️ WH : Apply water resistance grease.
7. Steering shaft bushing	16. Throttle cable	⊗ : Do not reuse.
8. Dust seal	17. Parking brake cable	
9. O-ring	18. Throttle case assembly	

1. Handlebar holder nut	 (b) : 60 N·m (6.0 kgf·m, 43.5 lbf·ft)
2. Tie-rod end nut	 (c) : 29 N·m (2.9 kgf·m, 21.0 lbf·ft)
3. Steering shaft lower nut	 (d) : 162 N·m (16.2 kgf·m, 117.0 lbf·ft)
4. Tie-rod nut	 (e) : 120 N·m (12.0 kgf·m, 87.0 lbf·ft)
 5. Washer : The conical side of washer faces outside.	 (f) : 28 N·m (2.8 kgf·m, 20.0 lbf·ft)
6. Steering shaft upper nut	 1303 : Apply thread lock to the thread part.
"B": Red mark	 1304 : Apply water resistance grease.
 (a) : 26 N·m (2.6 kgf·m, 19.0 lbf·ft)	

Handlebars Removal and Installation (LT-A750XP/ZK9)

B931G36206010

Removal

- 1) Remove the auxiliary headlight cover. Refer to "Auxiliary Headlight Removal and Installation in Section 9B in related manual"
- 2) Remove the combination meter. Refer to "Combination Meter Removal and Installation in Section 9C in related manual".
- 3) Remove the clamps.
- 4) Disconnect the brake hose from the hose guide.



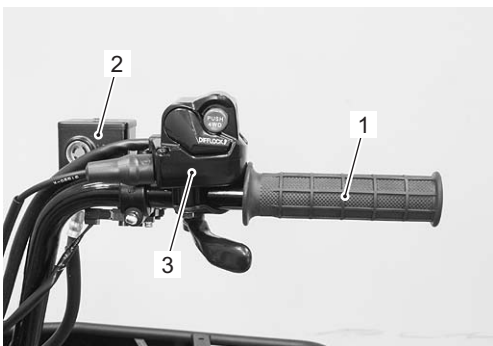
I931G3620001-01

- 5) Remove the following parts from the handlebars (right side).
 - a) Right grip (1)
 - b) Front brake master cylinder/Front brake lever (2)

⚠ CAUTION

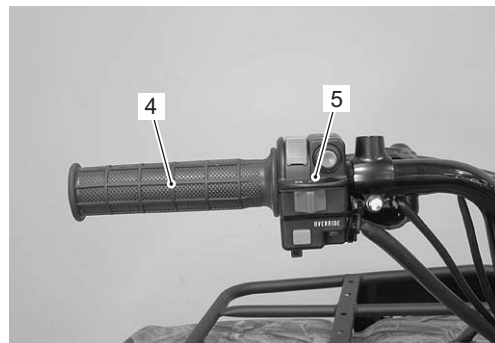
Do not turn the front brake master cylinder upside down.

- c) Throttle lever case (3)



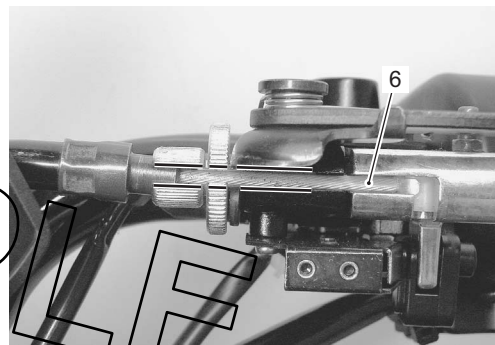
I931G3620002-01

- 6) Remove the following parts from left handlebars (left side).
 - a) Left grip (4)
 - b) Left switch box (5)
 - c) Horn button (For P-17, 24)
 - d) Emergency switch (For P-17)



I931G3620003-01

- 7) Disconnect the parking brake cable (6) from left brake lever.



I931H1620004-01

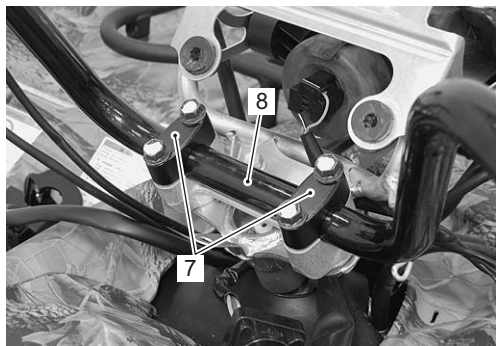
- 8) Remove the clamp.



I931G3620004-01

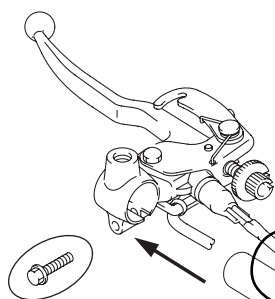
6B-4 Steering / Handlebar:

- 9) Remove the handlebar upper clamps (7) and handlebars (8).



I931G3620027-01

- 10) Remove the left brake lever from the handlebars (left side).



I831G1620006-05

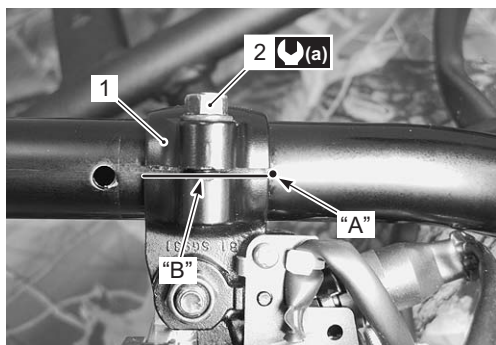
Installation

Install the handlebars in the reverse order of removal. Pay attention to the following points:

- Install the left brake lever (1) to the handlebars.
- Align the punch mark "A" on the handlebars with the mating surface "B" of rear brake lever (1).
- Tighten the rear brake lever holder clamp bolt (2) to the specified torque.

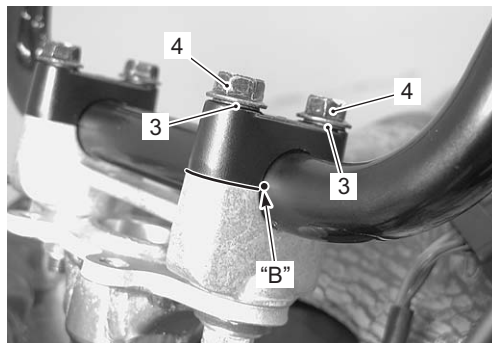
Tightening torque

Rear brake lever holder clamp bolt (a): 11 N·m (1.1 kgf-m, 8.0 lbf-ft)



I931H1620008-01

- Install the washers (3) and bolts (4) as shown in the steering/handlebars construction. Refer to "Steering / Handlebars Assembly Construction (LT-A750XP/ZK9) (Page 6B-2)".
- Set the handlebars so that its punch mark "B" aligns with the mating surface of the left handlebar holder.



I931H1620009-02

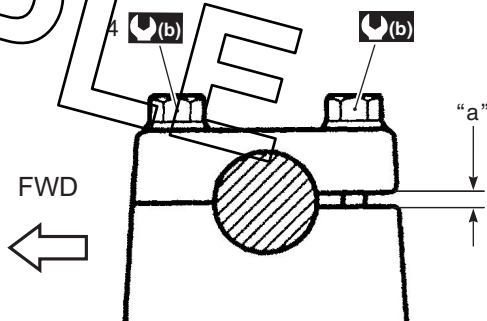
- Tighten the handlebar clamp bolts (4) to the specified torque.

NOTE

First tighten the handlebar clamp bolts (4) (front ones) to the specified torque.

Tightening torque

Handlebar clamp bolt (b): 26 N·m (2.6 kgf-m, 19.0 lbf-ft)

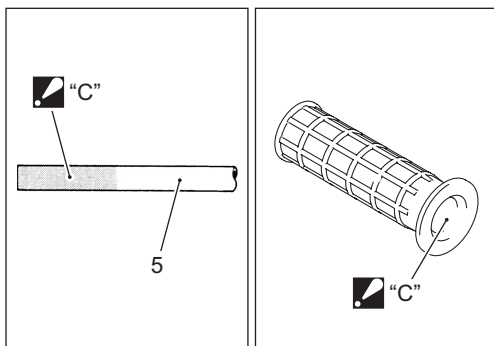


I931H1620010-01

"a": Clearance

- Apply adhesive agent to the handlebar right and left end and right and left grip inner wall.

BOND : Handle grip bond (Handle Grip Bond (commercially available))



I831G1620014-02

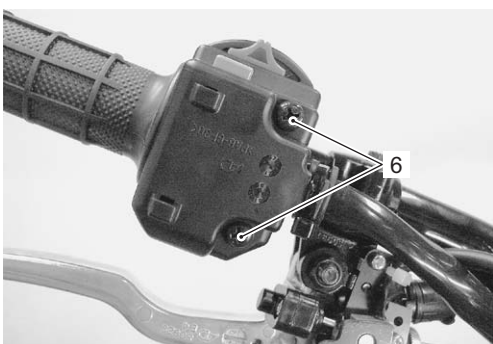
5. Handlebar
"C": Apply handle grip bond.

- Insert the projection "D" of the left handlebar switch assembly into the hole of the handlebars.



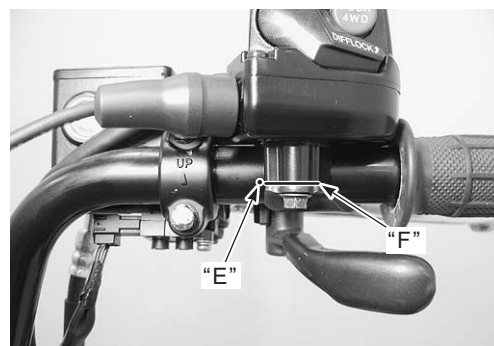
I931G3620005-01

- Tighten the left handlebar switch screws (6).



I931G3620006-01

- Install the master cylinder. Refer to "Front Brake Master Cylinder Assembly Removal and Installation in Section 4A in related manual".
- Align the punch mark "E" on the handlebars with the mating surface "F" of the throttle lever case.

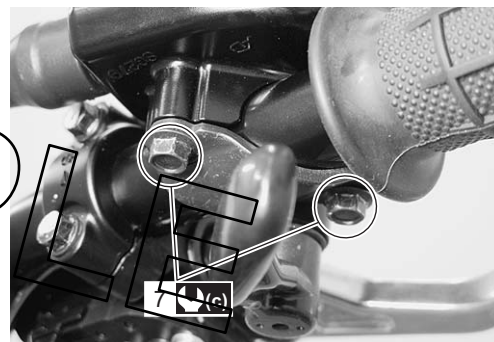


I931G3620007-01

- Tighten the throttle lever case bolts (7) to the specified torque.

Tightening torque

Throttle lever case bolt (c): 4 N·m (0.4 kgf-m, 3.0 lbf-ft)



I931G3620008-01

Handlebars Inspection (LT-A750XP/ZK9)

B931G36206011

Refer to "Handlebars Inspection in related manual".

Steering Shaft Removal and Installation (LT-A750XP/ZK9)

B931G36206012

Removal

- 1) Remove the EPS control unit. Refer to "EPS Control Unit Removal and Installation (LT-A750XP/ZK9) in Section 6C (Page 6C-48)".
- 2) Remove the EPS body assembly. Refer to "EPS Body Assembly Removal and Installation (LT-A750XP/ZK9) in Section 6C (Page 6C-50)".
- 3) Disconnect the tie-rod ends with the special tool. Refer to "Front Wheel Hub / Steering Knuckle Removal and Installation in Section 2B in related manual".


⚠ WARNING

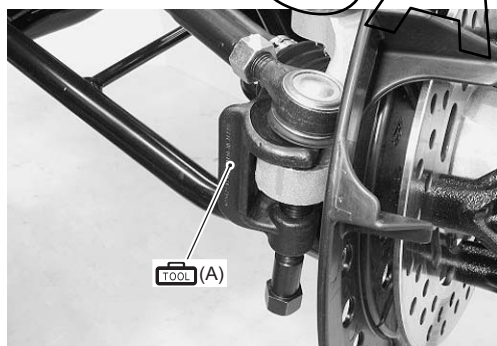
When using the tie-rod end remover, keep clear of the tie-rod end because it may come loose with some force and could strike you.

⚠ CAUTION

Make sure that the vehicle is supported securely.

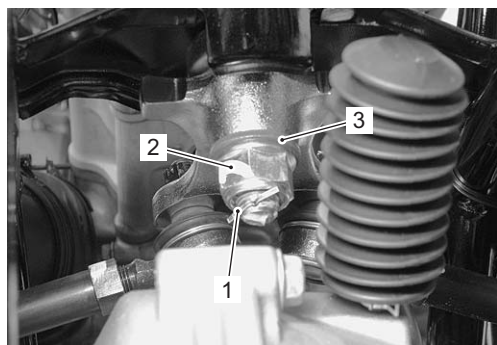
Special tool

 (A): 09942-72410 (Tie-rod end remover)



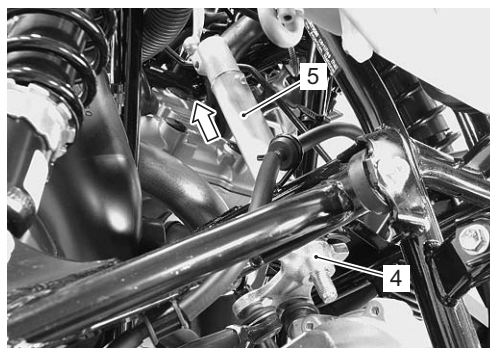
I931G3620009-01

- 4) Remove the cotter pin (1), nut (2) and washer (3).



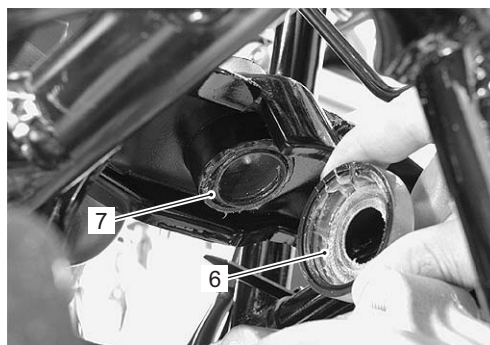
I931G3620010-01

- 5) Remove the steering arm plate (4) and steering shaft (5).



I931G3620011-01

- 6) Remove the lower dust seal (6) and O-ring (7).



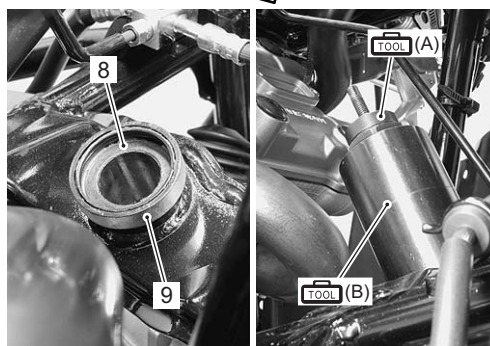
I931G3620012-01

- 7) Remove the steering shaft bushing (8) and dust seal (9) with the special tools and suitable socket wrench.

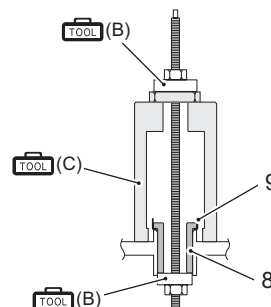
Special tool

 (A): 09924-84521 (Bearing installer set)

 (B): 09930-30721 (Rotor remover)



I931G3620013-01




I931H1620020-02

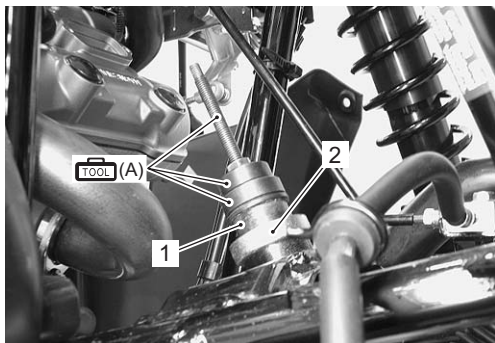
Installation

Install the steering shaft in the reverse order of removal. Pay attention to the following points:

- Install the steering shaft bushing (1) along with dust seal (2) with the special tool.


Special tool

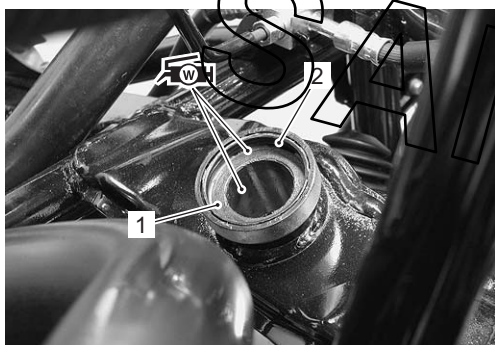
 **(A): 09924-84521 (Bearing installer set)**



I931G3620014-01

- Apply grease to the steering shaft bushing (1) and dust seal (2) and install them.

 **: Grease 99000-25160 (Water resistance grease or equivalent)**




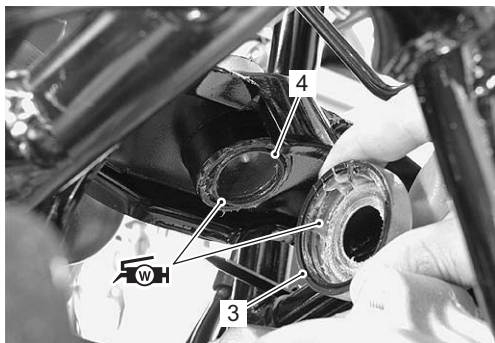
I931G3620015-01

- Apply grease to the lower dust seal (3) and O-ring (4).

⚠ CAUTION


The removed O-ring must be replaced with a new one.

 **: Grease 99000-25160 (Water resistance grease or equivalent)**



I931G3620016-01

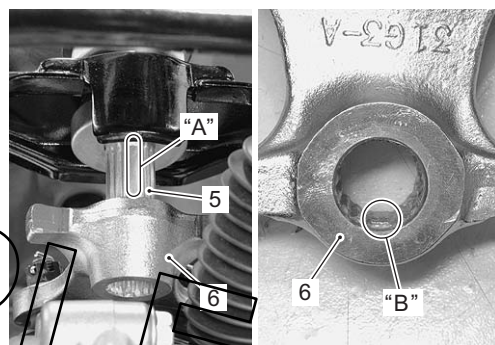
- Apply grease to the steering shaft.

 **: Grease 99000-25160 (Water resistance grease or equivalent)**



I931G3620017-01

- Install the steering shaft.
- When installing the steering arm plate (5), align the wide spline "A" of steering shaft (6) with the wide spline "B" of steering arm plate (5).



I931G3620018-01

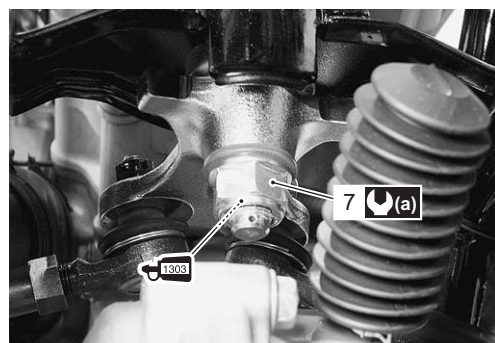
- Apply a small quality thread lock to the thread part of steering shaft.

 **: Thread lock cement 99000-32030 (THREAD LOCK CEMENT SUPER "1303" or equivalent)**

- Tighten the steering shaft lower nut (7) to the specified torque.

Tightening torque

Steering shaft lower nut (a): 162 N·m (16.2 kgf-m, 117.0 lbf-ft)



I931G3620019-01

- Install the cotter pin (8).

⚠ CAUTION

The removed cotter pin (8) must be replaced with a new one.



I931G3620020-01

- Install EPS body assembly. Refer to “EPS Body Assembly Removal and Installation (LT-A750XP/ZK9) in Section 6C (Page 6C-50)”.
- Install the EPS control unit. Refer to “EPS Control Unit Removal and Installation (LT-A750XP/ZK9) in Section 6C (Page 6C-48)”.
- Install the handlebars. Refer to “Handlebars Removal and Installation in related manual”.
- Install the front fender. Refer to “Front Side Exterior Parts Removal and Installation in Section 9D in related manual”.
- Install the front wheels. Refer to “Front / Rear Wheel Removal and Installation in Section 2D in related manual”.
- After installing these parts, adjust the toe. Refer to “Toe Adjustment (LT-A750XP/ZK9) in Section 0B (Page 0B-2)”.

Tie-rod / Tie-rod End Removal and Installation (LT-A750XP/ZK9)

B931G36206013

⚠ WARNING

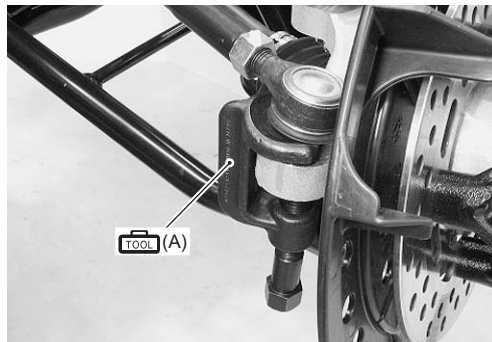
When using the tie-rod end remover, keep clear of the tie-rod end because it may come loose with some force and could strike you.

Removal

- 1) Remove the tie-rod end with the special tool. Refer to “Front Wheel Hub / Steering Knuckle Removal and Installation in Section 2B in related manual”.

Special tool

TOOL (A): 09942-72410 (Tie-rod end remover)



I931G3620021-01

- 2) Remove the cotter pin, tie-rod end nut and washer.

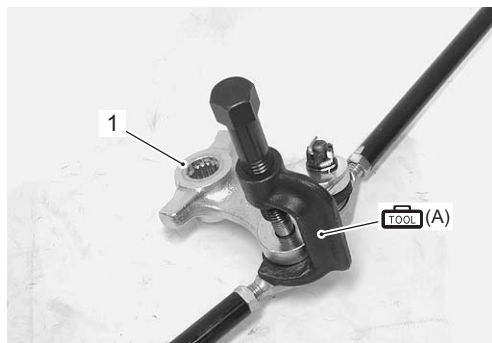


I931G3620022-01

- 3) Remove the steering arm plate (1) with a special tool.

Special tool

TOOL (A): 09942-72410 (Tie rod end remover)

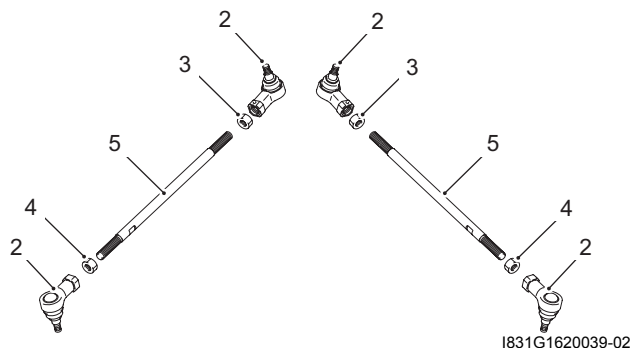


I931H1620030-01

- 4) Remove the other tie-rod end in the same manner as described previously.
- 5) Separate the tie-rod ends (2), nuts (3), (4) and tie-rods (5).

⚠ CAUTION

The lock-nuts (3) have left-hand threads.



Installation

Install the tie-rod in the reverse order of removal. Pay attention to the following points:

- When installing the tie-rods, make sure the short side "a" of tie-rod come outside.
- Push the tie-rod to tie-rod lock-nut tightening direction.
- Tighten the lock-nuts to the specification.

⚠ CAUTION

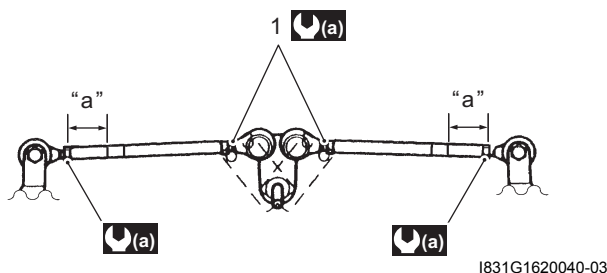
When tightening the lock-nuts, hold the tie-rod end with a open end wrench.

NOTE

The lock-nuts (1) have left-hand threads.

Tightening torque

Tie-rod lock-nut (a): 29 N·m (2.9 kgf-m, 21.0 lbf-ft)



- Install the washers (2) and tighten the rod end nuts (3) (steering arm plate side) to the specified torque.

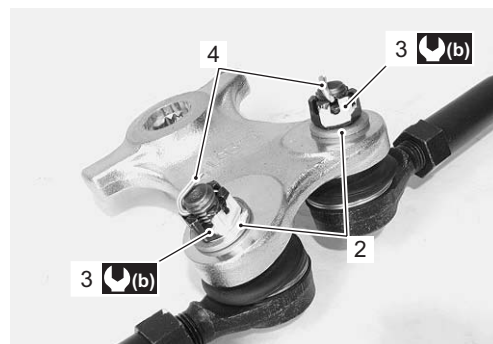
Tightening torque

Tie-rod end nut (b): 29 N·m (2.9 kgf-m, 21.0 lbf-ft)

- Install the cotter pins (4).

⚠ CAUTION

The removed cotter pins (4) must be replaced with new ones.



- Install the tie-rod ends (steering knuckle side). Refer to "Front Wheel Hub / Steering Knuckle Removal and Installation in Section 2B in related manual".
- After installed wheels, inspect the toe-out. If the toe-out is out of specification, bring it into the specified range. Refer to "Steering System Inspection in Section 0B in related manual" and "Toe Adjustment (LT-A750XP/ZK9) in Section 0B (Page 0B-2)".

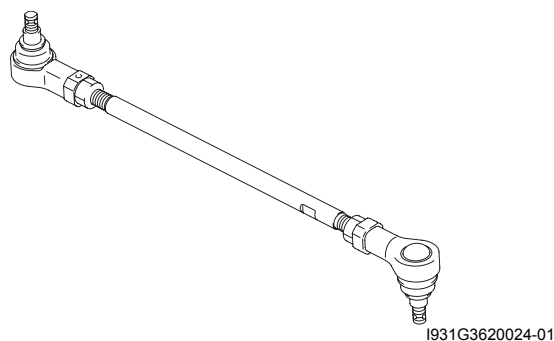
Steering Related Parts Inspection (LT-A750XP/ZK9)

B931G36206014

Refer to "Steering Shaft Removal and Installation (LT-A750XP/ZK9) (Page 6B-6)" and "Tie-rod / Tie-rod End Removal and Installation (LT-A750XP/ZK9) (Page 6B-8)".

Tie-rod

Inspect the tie-rod for distortion or damage. If any defects are found, replace the tie-rod with a new one.



Tie-rod End

Inspect the tie-rod ends for smooth movement. If there are any abnormalities, replace the tie-rod ends with new ones. Inspect the tie-rod end boots for wear or damage. If any defects are found, replace the tie-rod ends with new ones.



I931G3620025-01

Steering Shaft

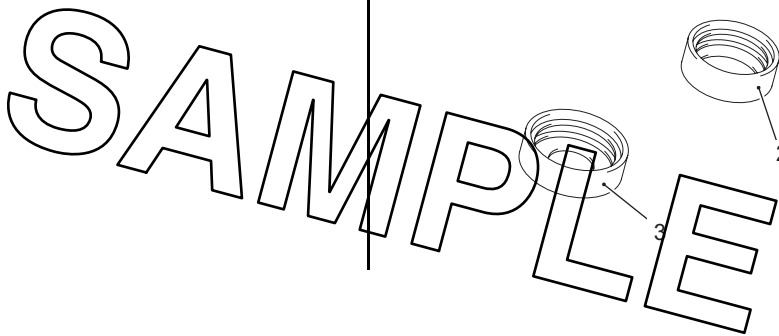
Inspect the steering shaft for distortion or bend. If any defects are found, replace the steering shaft with a new one.



I931H1620034-01

Steering Shaft Bushing and Dust Seal

Inspect the steering shaft bushing (1), dust seal (2) and lower dust seal (3) for wear or damage. If any defects are found, replace them with new ones.



I931H1620035-01

Specifications

Service Data (LT-A750XP/ZK9)

B931G36207003

Wheel

Item	Standard	Limit
Steering angle	46° (right & left)	—
Turning radius	3.1 m (10.2 ft)	—
Toe-out (with 75 kg, 165 lbs)	5 ± 4 mm (0.20 ± 0.16 in)	—
Camber	-1.3°	—
Caster	3.3°	—

Tightening Torque Specifications

B931G36207004

Fastening part	Tightening torque			Note
	N·m	kgf-m	lbf-ft	
Rear brake lever holder clamp bolt	11	1.1	8.0	☞ (Page 6B-4)
Handlebar clamp bolt	26	2.6	19.0	☞ (Page 6B-4)
Throttle lever case bolt	4	0.4	3.0	☞ (Page 6B-5)
Steering shaft lower nut	162	16.2	117.0	☞ (Page 6B-7)
Tie-rod lock-nut	29	2.9	21.0	☞ (Page 6B-9)
Tie-rod end nut	29	2.9	21.0	☞ (Page 6B-9)

NOTE

The specified tightening torque is described in the following.

“Steering / Handlebars Components (LT-A750XP/ZK9) (Page 6B-1)”

“Steering / Handlebars Assembly Construction (LT-A750XP/ZK9) (Page 6B-2)”

Reference:

For the tightening torque of fastener not specified in this section, refer to “Tightening Torque List (LT-A750XP/ZK9) in Section 0C (Page 0C-7)”.

Special Tools and Equipment

Recommended Service Material

B931G36208001

Material	SUZUKI recommended product or Specification		Note
Grease	Water resistance grease or equivalent	P/No.: 99000-25160	☞ (Page 6B-7) / ☞ (Page 6B-7) / ☞ (Page 6B-7)
Handle grip bond	Handle Grip Bond (commercially available)		☞ (Page 6B-5)
Thread lock cement	THREAD LOCK CEMENT SUPER “1303” or equivalent	P/No.: 99000-32030	☞ (Page 6B-7)

NOTE

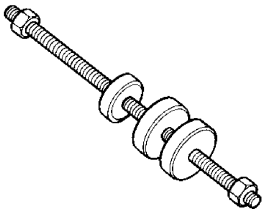
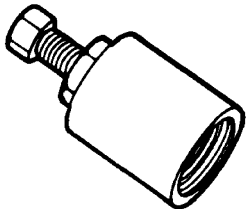
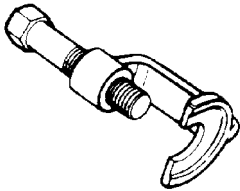
Required service material is also described in the following.

“Steering / Handlebars Components (LT-A750XP/ZK9) (Page 6B-1)”

“Steering / Handlebars Assembly Construction (LT-A750XP/ZK9) (Page 6B-2)”

Special Tool

B931G36208002

09924-84521 Bearing installer set ☞ (Page 6B-6) / ☞ (Page 6B-7)		09930-30721 Rotor remover ☞ (Page 6B-6)	
09942-72410 Tie-rod end remover ☞ (Page 6B-6) / ☞ (Page 6B-8) / ☞ (Page 6B-8)			

Power Assisted Steering System

Precautions

Precautions for EPS (LT-A750XP/ZK9)

B931G36300001

Refer to “General Precautions in Section 00 in related manual” and “Precautions for EPS (LT-A750XP/ZK9) in Section 00 (Page 00-1)”.

NOTE

When repairing EPS system, remove the front fender. Refer to “Front Side Exterior Parts Removal and Installation in Section 9D in related manual”.

P/S System Note (LT-A750XP/ZK9)

B931G36300002

⚠ CAUTION

Never remove the torque sensor to prevent accident and damage.

NOTE

EPS body assembly fasteners are important attaching parts in that they could affect the performance of vital parts and systems, and/or could result in major repair expense. Do not use a replacement part of lesser quality or substitute design. Torque values must be used as specified during reassembly to assure proper retention of these parts.

Precautions in Diagnosing Troubles (LT-A750XP/ZK9)

B931G36300003

- Take a note of DTC indicated on the SDS tool or EPS indicator light.
- Before inspection, be sure to read “Precautions for Electrical Circuit Service in Section 00 in related manual” and “Precautions for EPS (LT-A750XP/ZK9) in Section 00 (Page 00-1)” and understand what is written there.
- DTC C1122 (engine speed signal failure) is indicated when ignition switch is at ON position and engine is not running, but it means there is nothing abnormal if indication changes to a normal one when engine is started.
- As DTC is stored in memory of the EPS control unit, be sure to clear memory after repair by performing the procedure described in “DTC (Diagnostic Trouble Code) Deleting (LT-A750XP/ZK9) (Page 6C-21)”.

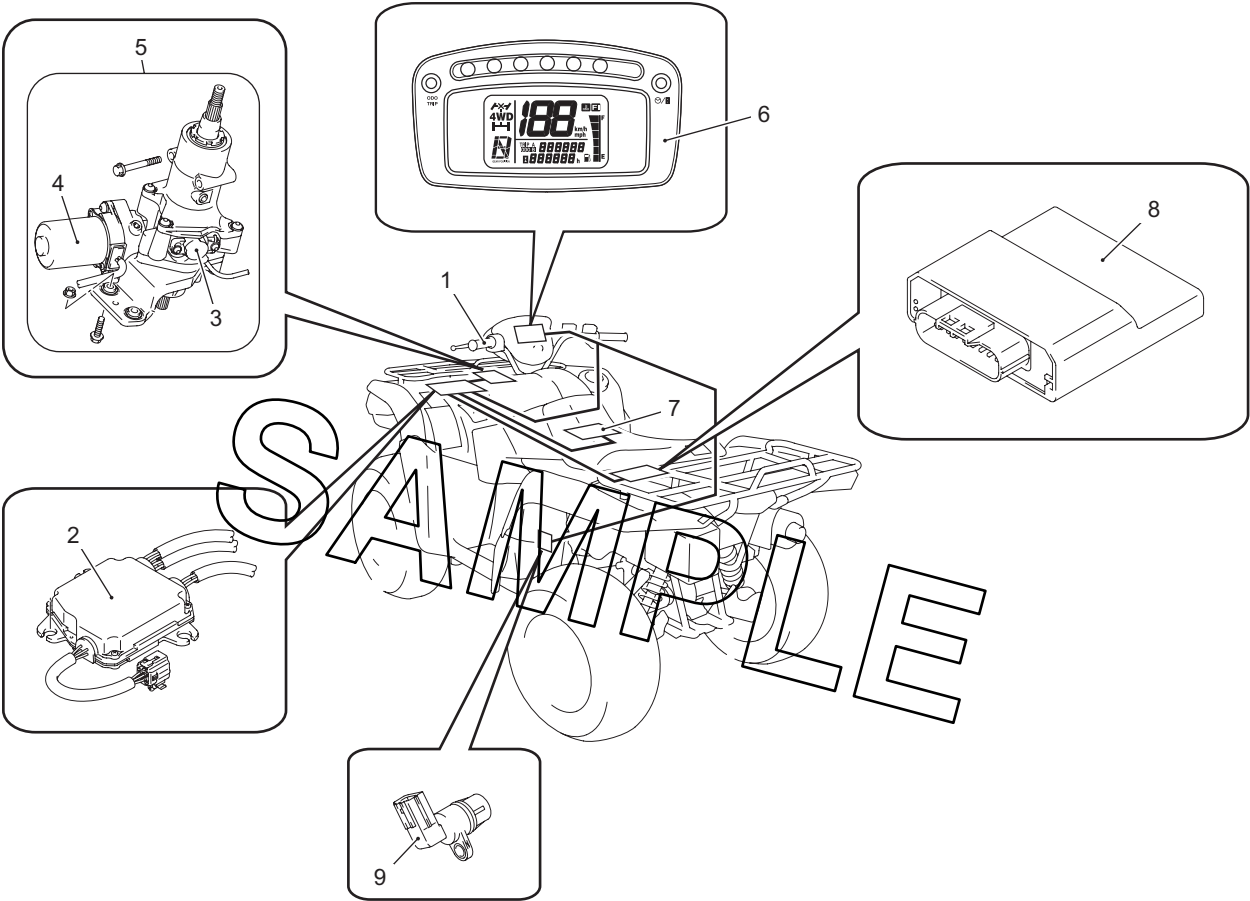
General Description

P/S System Description (LT-A750XP/ZK9)

B931G36301001

This electronic power steering (EPS) system consists of a EPS control unit (2), a torque sensor (3), a EPS motor (4). In this system, the EPS control unit determines the level and direction of the assist force for the handlebars (1) according to the signal from the torque sensor and the vehicle speed signal from speed sensor (9). The EPS control unit runs the motor so as to assist the operation of the handlebars (1). Take a note of DTC indicated on the EPS indicator light.

The EPS diagnoses troubles which may occur in the area including the following components when the ignition switch is ON and the engine is running. When the EPS control unit detects any malfunction, it stops the motor operation.



I931H1630001-04

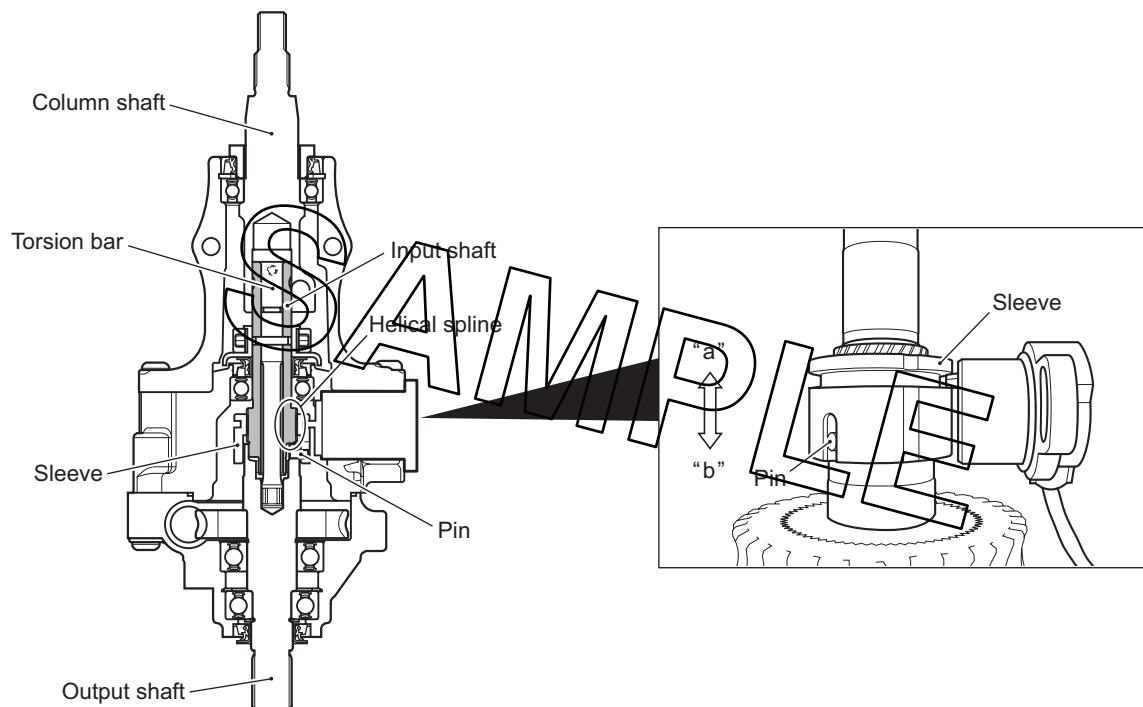
1. Handlebars	3. Torque sensor	5. EPS body assembly	7. Battery	9. Speed sensor
2. EPS control unit	4. EPS motor	6. Combination meter	8. ECM	

Detecting Principle

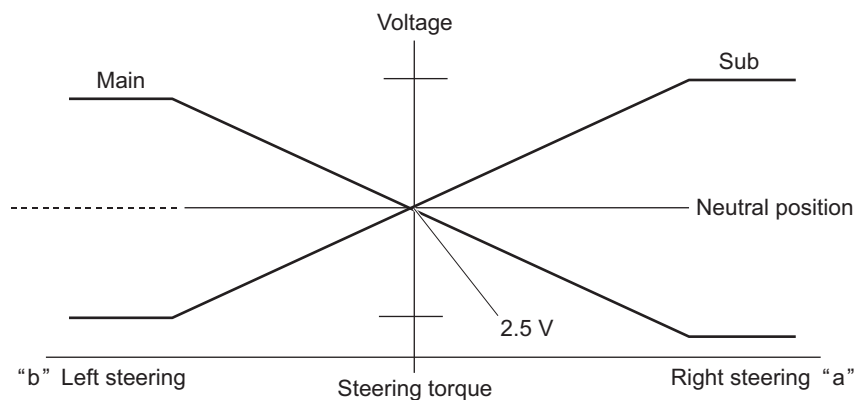
The column shaft is connected to the input shaft by means of serration. The output shaft and input shaft are connected via torsion bar. When torque is inputted from the column shaft, a relative angular displacement occurs between the input shaft and the output shaft due to twist of the torsion bar. As the sleeve is engaged with a fixed pin, such an angular displacement of the sleeve is converted to a linear displacement due to helical spline arrangement. By the return spring of torque sensor lever, the sleeve is always forced to one side within its annular groove. The sleeve's linear displacement causes the torque sensor lever to turn, which is then converted to a voltage signal to supply to EPS control unit.

The torque sensor is a double circuit of main and sub, when the handlebars is in neutral position (no torsional torque applied to the steering wheel), each torque sensor (main and sub) output is 2.5 V and in this state the EPS control unit determines the steering torque as 0. During operating the handlebars, the EPS control unit processes the main torque sensor input signal to determine the steering torque required for the current condition. The relation between the steering direction of the EPS control unit and the output voltage is as follows: The direction is determined to be right turn steering "a" if the main torque sensor output voltage is lower than 2.5 V and to be left turn steering if the voltage is higher than 2.5 V for controlling the steering direction in the case of normal steering operation.

Conversely, the direction is determined to be left turn steering "b" if the sub torque sensor output voltage is lower than 2.5 V and to be right turn steering if the voltage is higher than 2.5 V for controlling the steering direction.



I931H1630002-05

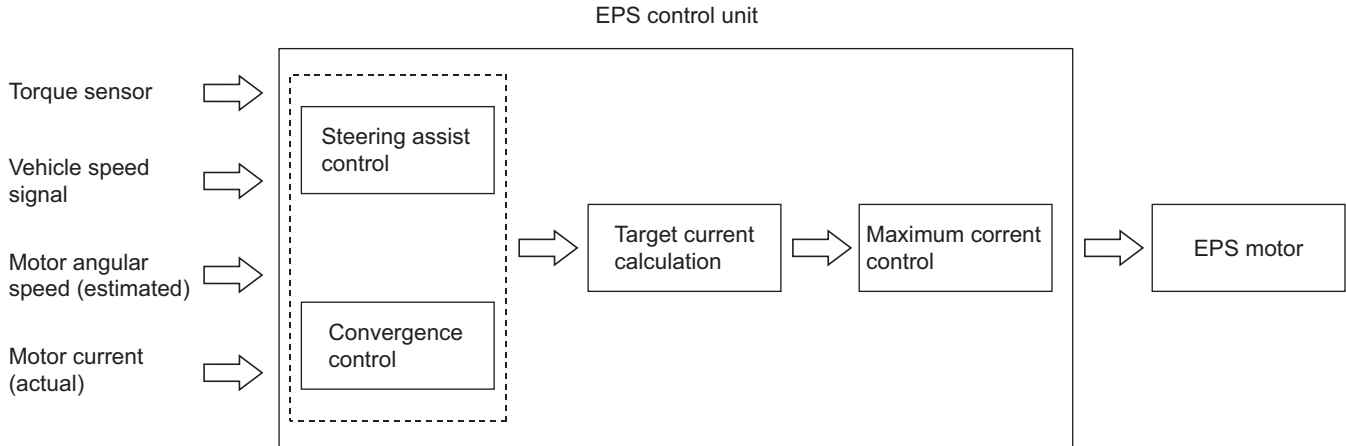


I931H1630003-02

Control System

In the EPS control unit, the steering assist control determines the basic power assist force and the convergence control improves the steering operation feeling. The controller determines the target motor current by the calculation of these controls and the maximum current limiting control and it also regulates the motor current so that the target motor current and the actual current are matched.

Power steering control input / output flow chart



I931G3630073-01

Control	Description
Steering assist control	This control determines the steering assist current on the basis of steering torque as detected by the torque sensor and of speed signal supplied from the speed sensor. This is the fundamental control necessary for the P/S system.
Convergence control	This control prevents convergence from deteriorating at a high speed by making current (compensating current) flow in the direction to keep the steering from turning, thereby improving vehicle maneuvering stability.
Maximum current control	If the steering input is sustained at a standstill, the motor continues to draw the maximum current for full-assist and the motor and EPS control unit may get overheated. To prevent this condition from occurring, this control limits and gradually reduces the maximum current flowing through the motor.
Failsafe control	In the EPS control unit, a failsafe function is integrated in the motor circuit for the purpose of safety. With the failsafe circuit in normal condition, the system is ON for the motor to draw current. If an abnormal condition is detected in the P/S system by the self-diagnostic function, the system turns OFF the circuit to interrupt the current supply to the motor so that the system can stop operation. Refer to "Fail-safe Function Description (LT-A750XP/ZK9) (Page 6C-5)".

EPS Diagnosis General Description (LT-A750XP/ZK9)

B931G36301002

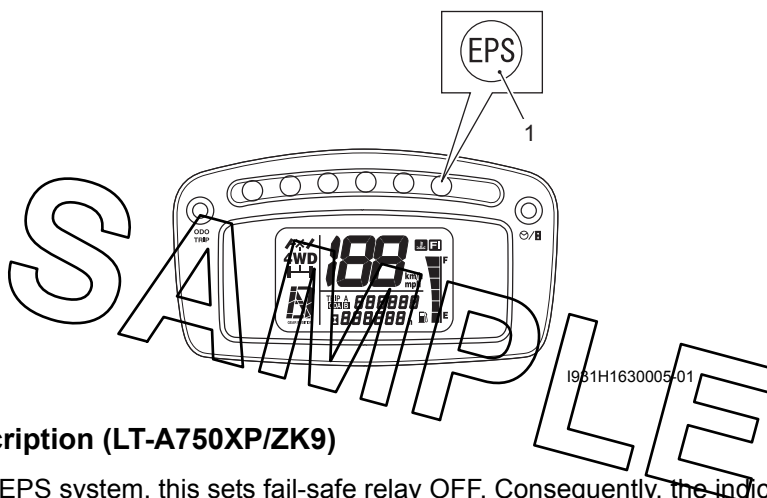
The P/S system in this vehicle is controlled by the EPS control unit. The EPS control unit has an self diagnostic system which detects a malfunction in this system. When diagnosing troubles, be sure to have full understanding of the outline of "Self Diagnostic System Description (LT-A750XP/ZK9) (Page 6C-5)" and each item in "Precautions in Diagnosing Troubles (LT-A750XP/ZK9) (Page 6C-1)", and then execute diagnosis according to "EPS System Check (LT-A750XP/ZK9) (Page 6C-12)".

Self Diagnostic System Description (LT-A750XP/ZK9)

B931G36301003

The EPS control unit performs the self diagnosis on the system and operates the "EPS" warning light (1) as follows.

- The "EPS" warning light lights when the ignition switch is turned to ON position (but the engine at stop) regardless of the condition of the P/S control system. This is only to check if the "EPS" warning light is operated properly.
- If the areas monitored by the EPS control unit is free from any trouble after the engine start (while engine is running), the "EPS" warning light turns OFF.
- When the EPS control unit detects a trouble which has occurred in the monitored areas the "EPS" warning light comes ON while the engine is running to warn the driver of such occurrence of the trouble and at the same time it stores the exact trouble area in memory inside of the EPS control unit.



Fail-safe Function Description (LT-A750XP/ZK9)

B931G36301004

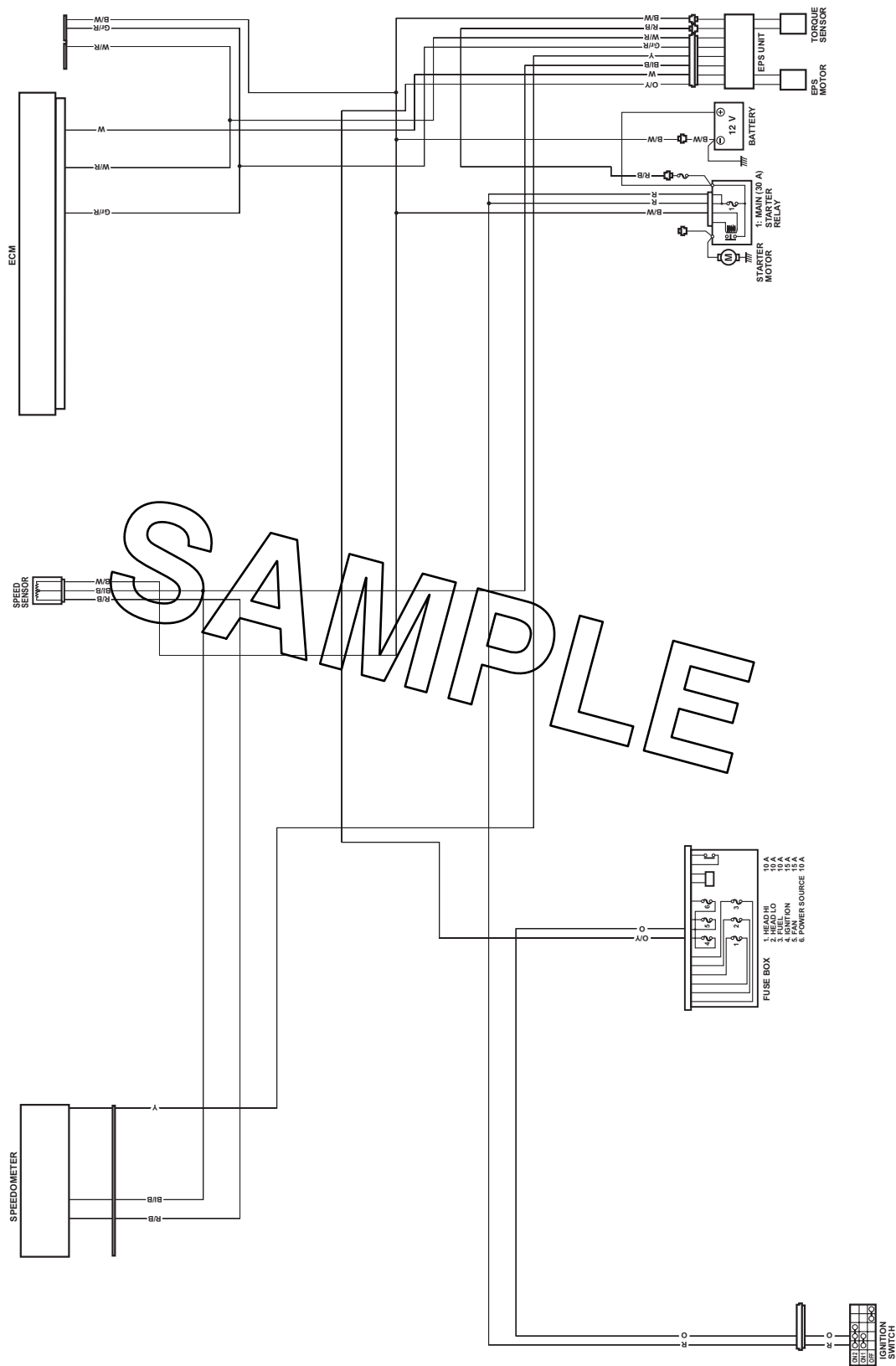
If malfunction occurs in the EPS system, this sets fail-safe relay OFF. Consequently, the indicator light ON, and no current will be applied to motor solenoid valve inactivating EPS and turning EPS indicator light ON. In this case, it functions as the normal steering. If malfunctions occurs while EPS is being activated, the fail-safe relay will be set OFF. Refer to "EPS Control Unit Diagram (LT-A750XP/ZK9) (Page 6C-7)".

Schematic and Routing Diagram

EPS Wiring Diagram (LT-A750XP/ZK9)

B931G36302001

Refer to "Wire Color Symbols in Section 0A in related manual".

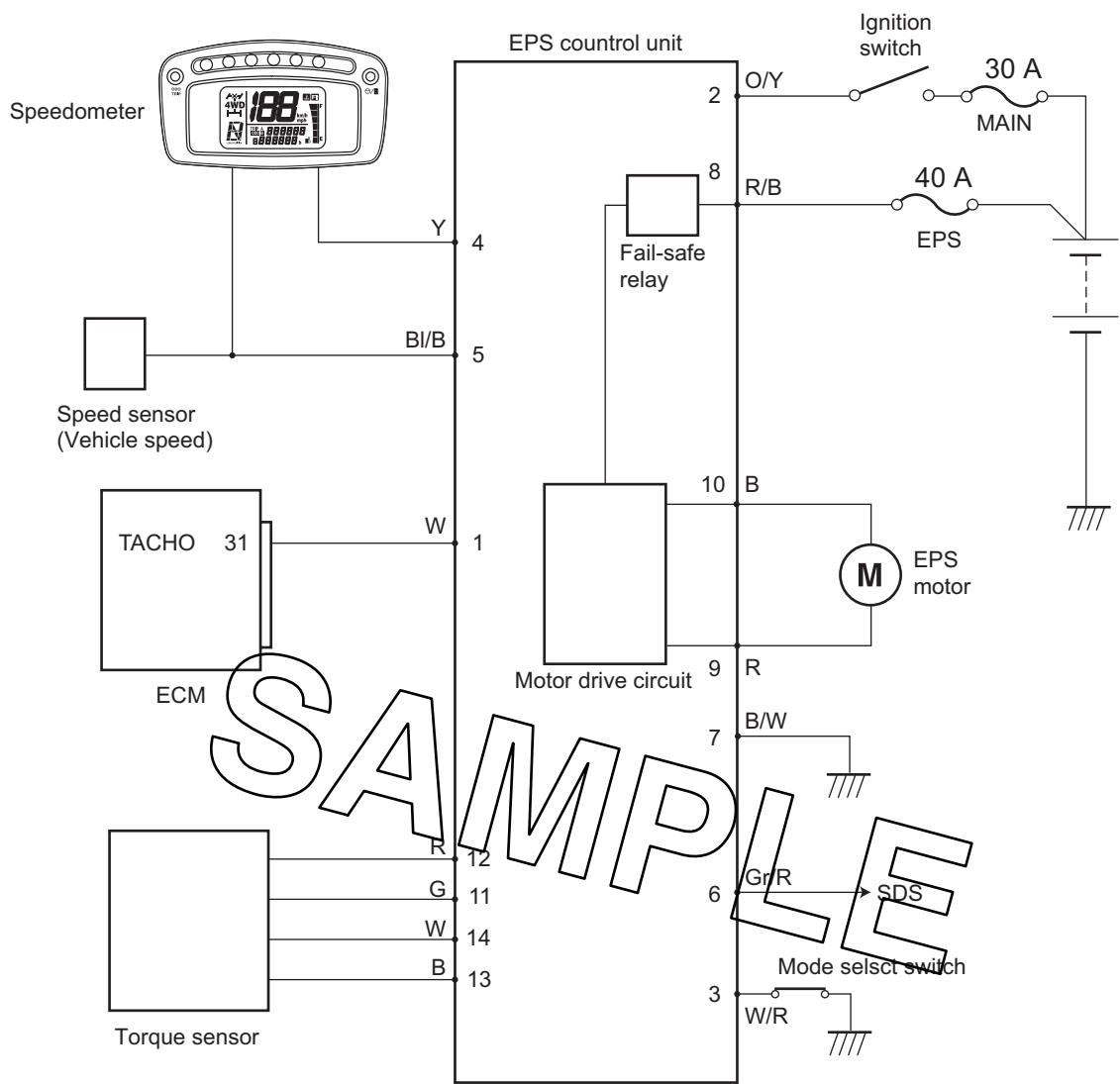


I931G3630070-01

EPS Control Unit Diagram (LT-A750XP/ZK9)

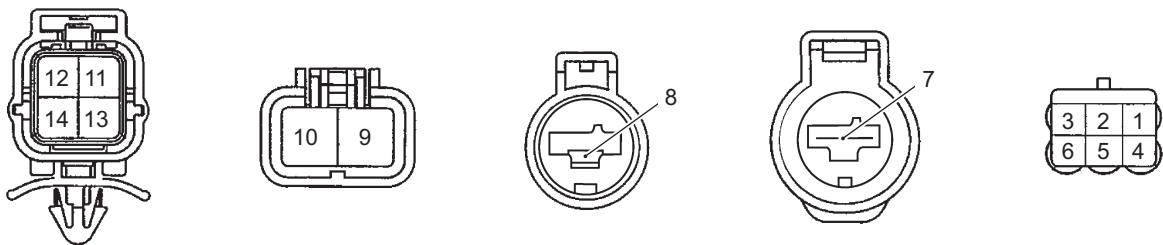
B931G36302002

Refer to “Wire Color Symbols in Section 0A in related manual”.



I931G3630071-01

EPS control unit coupler (EPS control unit harness end)



I931H1630092-01

1. Engine speed signal	8. Power source
2. Ignition signal for EPS control unit	9. Motor output (-)
3. Mode select switch	10. Motor output (+)
4. "EPS" warning light	11. Torque sensor signal (Main)
5. Vehicle speed signal	12. Power supply for torque sensor
6. SDS	13. Ground for torque sensor
7. Ground for EPS control unit	14. Torque sensor signal (Sub)

EPS System Wiring Harness Routing Diagram (LT-A750XP/ZK9)

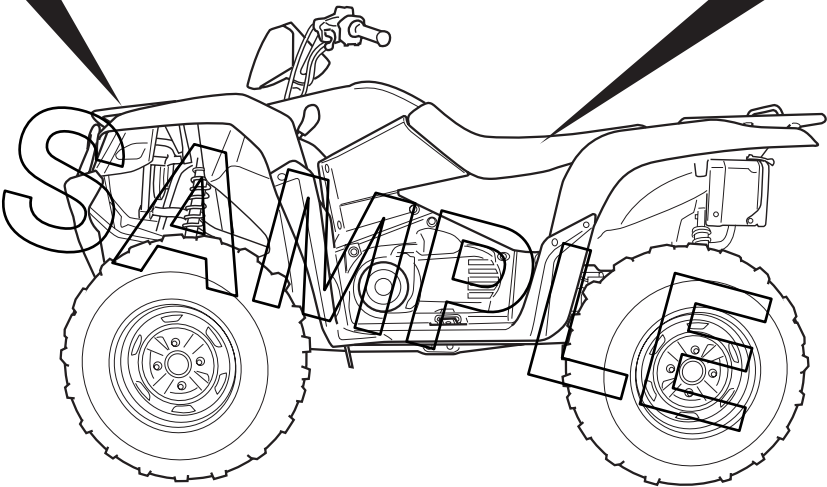
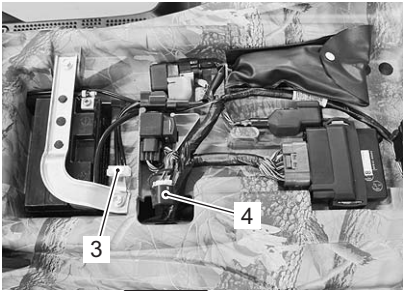
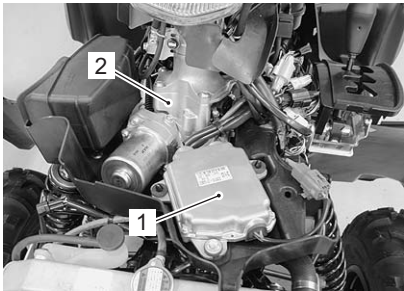
B931G36302003

Refer to “Wiring Harness Routing Diagram (LT-A750XP/ZK9) in Section 9A (Page 9A-4)”.

Component Location

EPS Components Location (LT-A750XP/ZK9)

B931G36303001



1. EPS control unit	3. Fuse (EPS)
2. EPS body assembly	4. Mode select coupler

I931G3630002-02

Diagnostic Information and Procedures

EPS Troubleshooting (LT-A750XP/ZK9)

B931G36304001

The EPS is equipped with a self-diagnosis function. The detected malfunction is stored as a diagnostic trouble code which causes the EPS indicator light to light up or flash in set patterns to indicate the malfunction. Diagnostic trouble codes saved in the memory remain stored even through the ignition switch is turned OFF and they cannot be deleted without performing the DTC erasing procedure. In order to repair the EPS correctly, ask the customer for the exact circumstances under which the malfunction occurred, then check the EPS indicator light and the output diagnostic trouble codes. Explain to the customer that depending on how the vehicle is operated, the EPS indicator light may light up even though the EPS is operating correctly.

Troubleshooting Procedure

Troubleshooting should be proceed as follows. If the order is performed incorrectly or any part is omitted, an error in misdiagnosis may result.

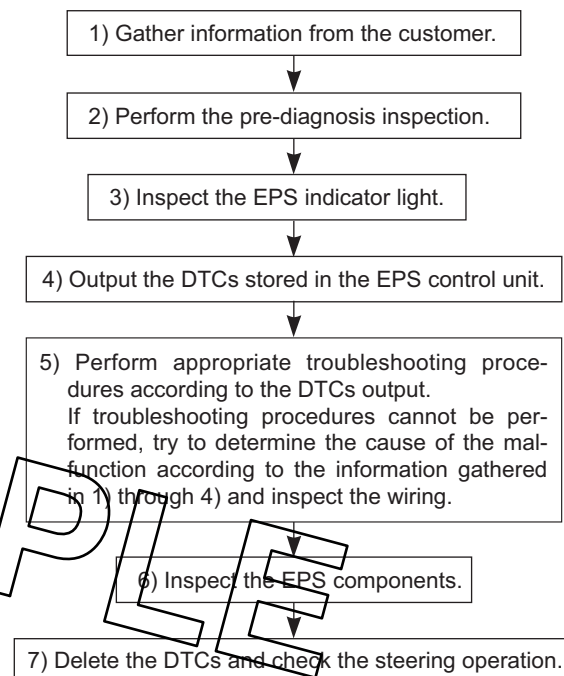
- 1) Gather information from the customer.
- 2) Perform the pre-diagnosis inspection. Refer to "Pre-diagnosis Inspection (LT-A750XP/ZK9) (Page 6C-10)".
- 3) Inspect the EPS indicator light. Refer to "EPS System Check (LT-A750XP/ZK9) (Page 6C-12)".
- 4) Output the DTCs stored in the EPS control unit. Refer to "DTC (Diagnostic Trouble Code) Output (LT-A750XP/ZK9) (Page 6C-19)".
- 5) Perform appropriate troubleshooting procedures according to the DTCs output. Refer to "DTC Table (LT-A750XP/ZK9) (Page 6C-25)".
If troubleshooting procedures cannot be performed, try to determine the cause of the malfunction according to the information gathered in 1) through 4) and inspect the wiring. Refer to "EPS Wiring Diagram (LT-A750XP/ZK9) (Page 6C-6)" and "EPS Control Unit Diagram (LT-A750XP/ZK9) (Page 6C-7)".

⚠ CAUTION

Each time a resistance is measured, the ignition switch should be set to OFF.

- 6) Inspect the EPS components. Refer to "EPS Motor Inspection (LT-A750XP/ZK9) (Page 6C-53)".
- 7) Delete the DTCs and check the power steering operation. Refer to "DTC (Diagnostic Trouble Code) Deleting (LT-A750XP/ZK9) (Page 6C-21)".

Basic Troubleshooting Diagram



I931G3630069-01

Information Gathering

To properly diagnose a malfunction, one must not make guesses or assumptions about the circumstances that caused it. Proper diagnosis and repair require duplicating the situation in which the malfunction occurred. If a diagnosis is made without duplicating the malfunction, even an experienced service technician may make a misdiagnosis and not perform the servicing procedure correctly, resulting in the malfunction not being repaired. Therefore, in order to properly diagnose and repair the vehicle, the customer must be questioned about the conditions at the time that the malfunction occurred making "Information gathering" very important. In order that the information obtained from the customer to be used as a reference during troubleshooting, it is necessary to ask certain important questions concerning the malfunction. Therefore, a questionnaire has been created to improve the information-gathering procedure.

EXAMPLE: CUSTOMER PROBLEM INSPECTION FORM

Customer's name:	Model:	VIN:	
Date of issue:	Date Reg.	Date of problem:	Mileage:
Problem Symptoms	<ul style="list-style-type: none"> • Handlebars feels heavy • Vehicle pulls to one side during straight driving • Poor recovery from turns • Too much play in steering • Abnormal noise while vehicle is running: from motor, other _____ • Other _____ 		
Frequency of Occurrence	<ul style="list-style-type: none"> • Continuous/Intermittent (_____ times a day, a month)/other _____ 		
Conditions for Occurrence of Problem	<ul style="list-style-type: none"> • Vehicle at stop & ignition switch ON: • When starting: at initial start only/at every start/Other _____ • Vehicle speed while: _____ while accelerating/while decelerating/at stop/while turning/while running at constant speed/other _____ • Road surface condition: Paved road/rough road/snow-covered road/other _____ • Chain equipment: 		
Environmental Condition	<ul style="list-style-type: none"> • Weather: fair/cloudy/rain/snow/other _____ • Temperature: _____ °F (_____ °C) 		
DTC	<ul style="list-style-type: none"> • First check: Normal code/malfunction code (_____) • Second check after driving test: Normal code/malfunction code (_____) 		

I931H1630009-03

NOTE

This form is a standard sample. The form should be modified according to conditions and characteristic of each market.

Pre-diagnosis Inspection (LT-A750XP/ZK9)

B931G36304002

The mechanical of the steering system should be inspected prior to performing any electrical checks. These inspections may find problems that the EPS could not detect; thus, shortening repair time.

Tire

Tire type

Tire type

Front: DUNLOP KT411

Rear: DUNLOP KT415

Tire pressure

Refer to "Tire Inspection in Section 0B in related manual".

⚠ CAUTION

The standard tire fitted on this vehicle is AT25 x 8 – 12 ☆☆ for front and AT25 x 10 – 12 for rear. The use of tires other than those specified may cause instability. It is highly recommended to use a SUZUKI Genuine Tire.

6C-11 Power Assisted Steering System:

Steering Related Parts

Refer to "Steering Parts Inspection in Section 6B in related manual".

Battery

Battery voltage inspection

- 1) Turn the ignition switch OFF.
- 2) Remove the seat. Refer to "Seat Removal and Installation in Section 9D in related manual".
- 3) Measure the voltage between the (+) and (-) battery terminals using the multi circuit tester.
If the voltage is less than 12.0 V, charge or replace the battery and inspect the charging system. Refer to "Battery Runs Down Quickly in Section 1J in related manual".

Special tool

TOOL (A): 09900-25008 (Multi circuit tester set)

Tester knob indication

Voltage (---)

Battery voltage

12.0 V and more



I931G3630003-01

- 4) Reinstall the seat.

EPS control unit ground wire inspection

- 1) Turn the ignition switch OFF.
- 2) Remove the seat. Refer to "Seat Removal and Installation in Section 9D in related manual".
- 3) Disconnect the battery (-) lead wire.



I931G3630004-01

- 4) Remove the front fender. Refer to "Front Side Exterior Parts Removal and Installation in Section 9D in related manual".
- 5) Disconnect the EPS control unit coupler (1).



I931G3630005-01

- 6) Check for continuity between terminal "A" at the coupler and the battery (-) terminal.

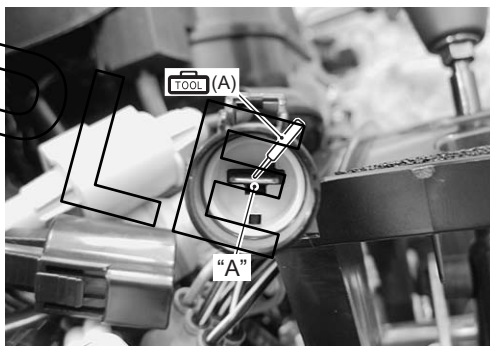
Special tool

TOOL (A): 09900-25008 (Multi circuit tester set)

Tester knob indication

Continuity (••••)

EPS control unit coupler (Vehicle harness end)



I931G3630006-01



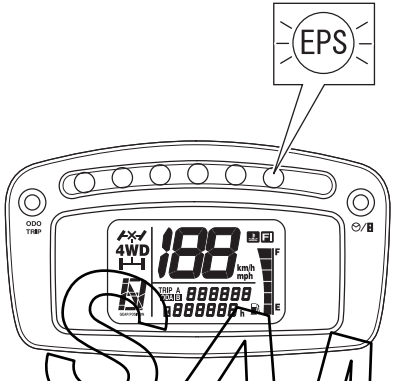
I931G3630007-01

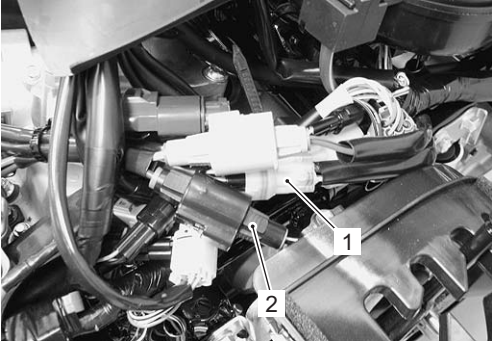

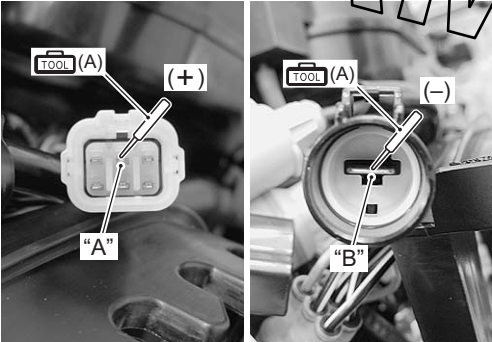
EPS System Check (LT-A750XP/ZK9)


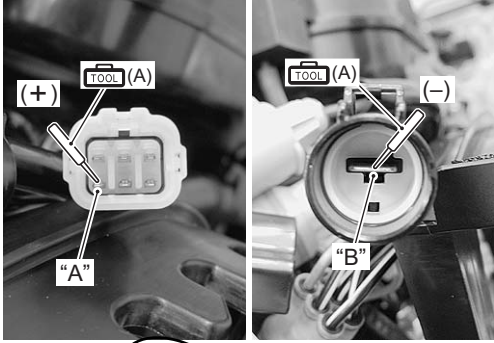

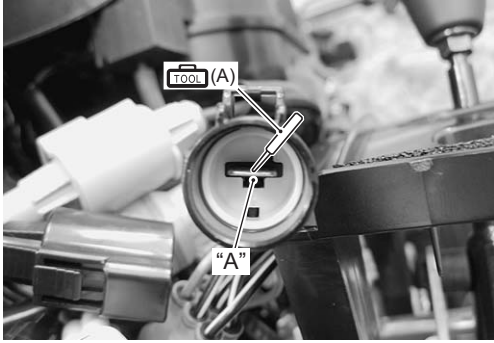
B931G36304003

▲ WARNING

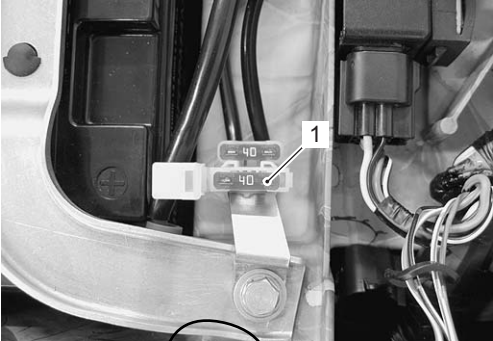
Carry out test drive in light traffic area to prevent an accident.

Step	Action	Yes	No
1	1) Perform "Customer Complaint Analysis". <i>Was customer complaint analysis performed according to instruction?</i>	Go to Step 2.	Perform customer complaint analysis.
2	1) Check for operation of the "EPS" warning lamp when turning the ignition switch ON. 2) If OK, start engine, run it idle and check "EPS" warning lamp remains ON continuously.  <i>Is "EPS" warning lamp remains ON continuously?</i>	Go to Step 3.	<ul style="list-style-type: none"> Go to Step 4. DTC output (Refer to "DTC (Diagnostic Trouble Code) Output (LT-A750XP/ZK9) (Page 6C-19)".)
3	(The EPS indicator light lights up) 1) Start the engine. <i>Does the EPS indicator light go off?</i>	Normal (No DTC exists)	<ul style="list-style-type: none"> DTC output (Refer to "DTC (Diagnostic Trouble Code) Output (LT-A750XP/ZK9) (Page 6C-19)".) If DTC can not be output (the EPS indicator light does not flash), go to Step 7.

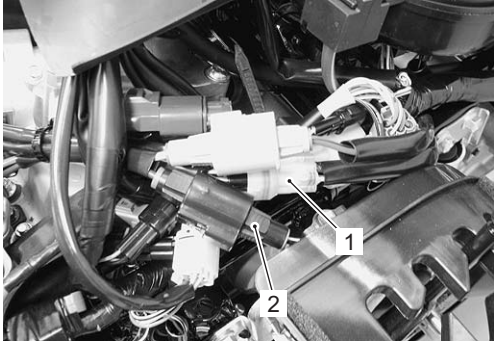

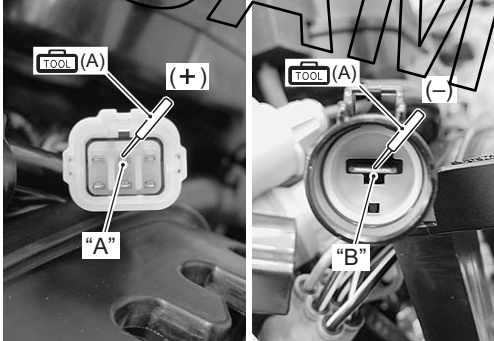
Step	Action	Yes	No
4	<p>(The EPS indicator light does not light up)</p> <p>1) Turn the ignition switch OFF.</p> <p>2) Disconnect the EPS control unit coupler (1) and (2).</p>  <p>I931G3630008-01</p> <p>3) Turn the ignition switch ON with the EPS control unit coupler disconnected, measure the voltage between terminal “A” and terminal “B” at the coupler.</p> <p>Special tool  (A): 09900–25008 (Multi circuit tester set)</p> <p>Tester knob indication Voltage (---)</p> <p>Normal value (“A” – “B”) Battery voltage (12.0 V and more)</p> <p>EPS control unit coupler (Vehicle harness end)</p>  <p>I931G3630009-01</p> <p>Is the voltage between “A” and “B” normal?</p>	Go to Step 5.	Inspect the wire harness. (Faulty ignition or ground wire)

Step	Action	Yes	No
5	<p>1) Turn the ignition switch ON with the EPS control unit coupler disconnected, measure the voltage between terminal "A" and terminal "B" at the coupler.</p> <p>Special tool  (A): 09900-25008 (Multi circuit tester set)</p> <p>Tester knob indication Voltage (---)</p> <p>Normal value ("A" – "B") 1.0 V and more</p> <p>EPS control unit coupler (Vehicle harness end)</p>  <p>I931G3630010-01</p> <p><i>Is the voltage between "A" and "B" normal?</i></p>	Go to Step 6.	<ul style="list-style-type: none"> Inspect the wire harness. (Faulty indicator light wire) Indicator light is blown.
6	<p>1) Turn the ignition switch OFF.</p> <p>2) Check for continuity between terminal "A" at the coupler and body ground.</p> <p>Special tool  (A): 09900-25008 (Multi circuit tester set)</p> <p>Tester knob indication Continuity (•••)</p> <p>EPS control unit coupler (Vehicle harness end)</p>  <p>I931G3630011-01</p> <p><i>Are there continuity between "A" and body ground?</i></p>	Replace the EPS control unit.	Inspect the wire harness. (Faulty ground wire)


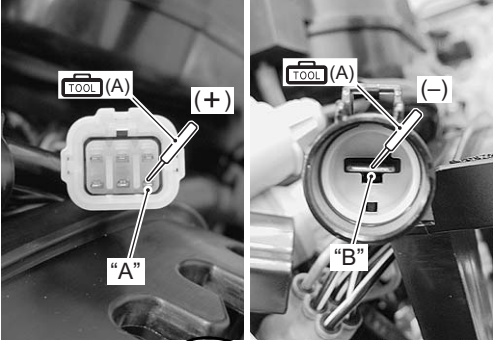
6C-15 Power Assisted Steering System:

Step	Action	Yes	No
7	<p>(The EPS indicator light does not go off)</p> <p>1) Remove the seat. Refer to “Seat Removal and Installation in Section 9D in related manual”.</p> <p>2) Open the fuse box and inspect the ignition fuse (1).</p> <p>⚠ CAUTION</p> <p>If a fuse is blown, find the cause of the problem and correct it before replacing the fuse.</p> <p><u>EPS fuse</u> 40 A</p> <p></p> <p>I931H1630016-01</p> <p><i>Is the ignition fuse OK?</i></p>	Go to Step 8.	Replace the EPS fuse.


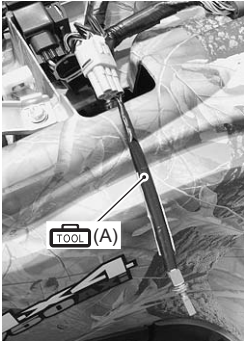
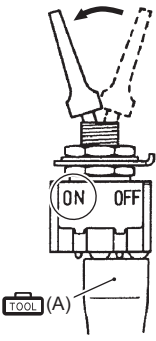

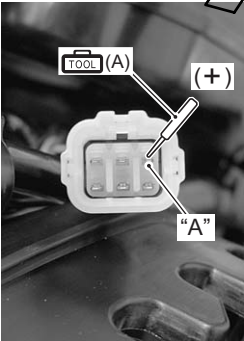
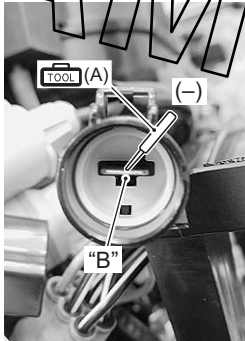
SAMPLE

Step	Action	Yes	No
8	<p>1) Turn the ignition switch OFF.</p> <p>2) Disconnect the EPS control unit coupler (1) and (2).</p>  <p style="text-align: right; font-size: small;">I931G3630008-01</p> <p>3) Turn the ignition switch ON with the EPS control unit coupler disconnected, measure the voltage between terminal "A" and terminal "B" at the coupler.</p> <p>Special tool  (A): 09900-25008 (Multi circuit tester set)</p> <p>Tester knob indication Voltage (---)</p> <p>Normal value ("A" – "B") Battery voltage (12.0 V and more)</p> <p>EPS control unit coupler (Vehicle harness end)</p>  <p style="text-align: right; font-size: small;">I931G3630009-01</p> <p><i>Is the voltage between "A" and "B" normal?</i></p>	Go to Step 9.	Inspect the wire harness. (Faulty ignition or ground wire)

6C-17 Power Assisted Steering System:

Step	Action	Yes	No
9	<div>1) Turn the ignition switch ON with the EPS control unit coupler disconnected, measure the voltage between terminal “A” and terminal “B” at the coupler.</div> <div>Special tool</div> <div> (A): 09900–25008 (Multi circuit tester set)</div> <div>Tester knob indication</div> <div>Voltage (---)</div> <div>Normal value (“A” – “B”)</div> <div>1.0 V and more</div> <div>EPS control unit coupler (Vehicle harness end)</div> <div></div> <div>I931G3630012-01</div> <div>Is the voltage between “A” and “B” normal?</div>	Go to Step 10.	Inspect the wire harness. (Faulty indicator light wire)

SAMPLE

Step	Action	Yes	No
10	<p>1) Turn the ignition switch OFF.</p> <p>2) Short the mode select coupler terminals using the special tool.</p> <p>Special tool  (A): 09930-82710 (Mode select switch)</p>   <p>I931G3630013-01</p> <p>3) Check for continuity between terminal "A" and terminal "B" at the coupler.</p> <p>Special tool  (A): 09900-25008 (Multi circuit tester set)</p> <p>Tester knob indication Continuity (●)</p> <p>EPS control unit coupler (Vehicle harness end)</p>   <p>I931G3630014-01</p> <p>Is there continuity between "A" and "B"?</p>	Replace the EPS control unit.	Inspect the wire harness. (Faulty mode select switch wire)

DTC (Diagnostic Trouble Code) Output (LT-A750XP/ZK9)

B931G36304004

NOTE

- Even through the EPS is operating correctly, a DTC is memorized in any of the following conditions.
 - Previous malfunctions were repaired, but the DTCs were not deleted.
- After carrying out DTC deleting and EPS operation check, explain to the customer that the EPS is operating correctly. Refer to “DTC (Diagnostic Trouble Code) Deleting (LT-A750XP/ZK9) (Page 6C-21)”.

Use of Mode Select Switch

Connect the special tool to the mode select coupler to output the memorized DTCs on the EPS indicator light.

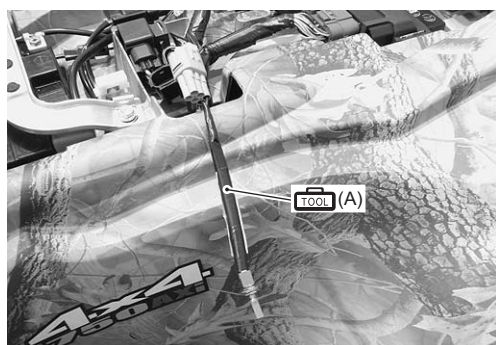
- 1) Turn the ignition switch OFF.
- 2) Remove the seat. Refer to “Seat Removal and Installation in Section 9D in related manual”.
- 3) Connect the special tool to the mode select coupler (1).

Special tool

TOOL (A): 09930-82710 (Mode select switch)

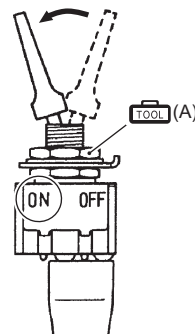


I931G3630015-01



I931G3630017-01

- 4) Switch the special tool to ON.



I931H1630028-01

- 5) Turn the ignition switch ON.

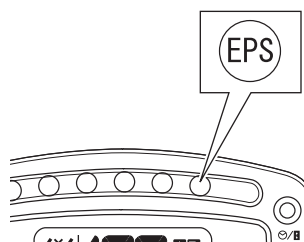
The EPS indicator light starts flashing to indicate the DTC. Refer to “DTC Table (LT-A750XP/ZK9) (Page 6C-25)”.

NOTE

- If there is a DTC, the EPS indicator light keeps flashing cyclically and repeatedly.
- If there is no DTC, the EPS indicator light keeps lighting on.
- When outputting DTCs, never turn the ignition switch to headlight ON position or auxiliary headlight ON position in order to prevent the battery from discharging.



I931G3630018-01



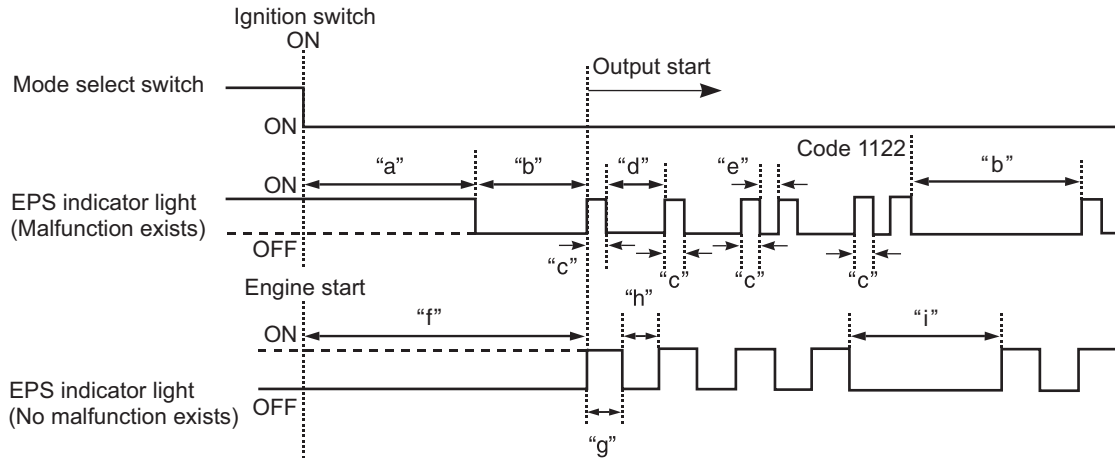
I931H1630029-01

- 6) Turn the ignition switch OFF and disconnect the special tool.

Understanding the DTC (Diagnostic Trouble Code)

A four-digit DTC is shown through the flashing pattern of the EPS indicator light. A number between 1 and 9 is represented by the number of times that the EPS indicator light lights up in interval of 0.3 seconds and the separation between the each digit are indicated by the light staying off for 1 seconds. In addition, the separation between the start code and the DTC is indicated by the light being off for 3 seconds. After the start code is displayed, DTCs appear from the smallest number code.

If no DTCs are memorized, the EPS indicator light keeps blinking by the four times at same interval.



I931H1630030-04

"a": Initial minimum light ON time (About 3 seconds)	"f": Indicator light OFF time (5 seconds)
"b": Error code interval (About 3 seconds)	"g": Normal code light ON time (1 seconds)
"c": Code light ON time (0.3 seconds)	"h": Normal code light OFF time (1 seconds)
"d": Main-sub code interval (1 seconds)	"i": Interval (3 seconds)
"e": Sub code (0.3 seconds)	

Use of SDS

NOTE

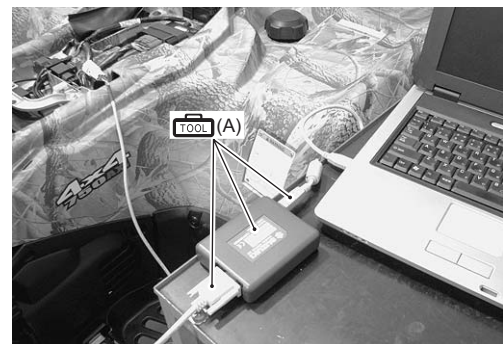
- Don't disconnect couplers from EPS control unit, the battery cable from the battery, EPS control unit ground wire harness from the engine or main fuse before confirming the malfunction code (self-diagnostic trouble code) stored in memory. Such disconnection may erase the memorized information in EPS control unit memory.
- DTC stored in EPS control unit memory can be checked by the SDS.

- 1) Remove the seat. Refer to "Seat Removal and Installation in Section 9D in related manual".

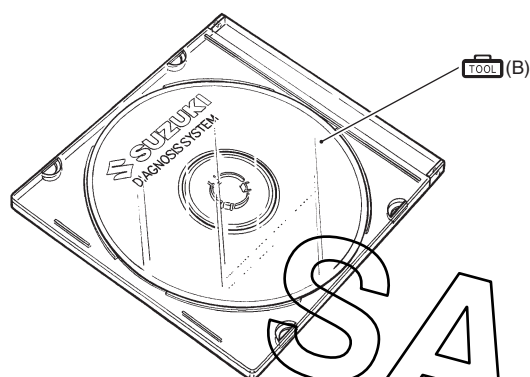
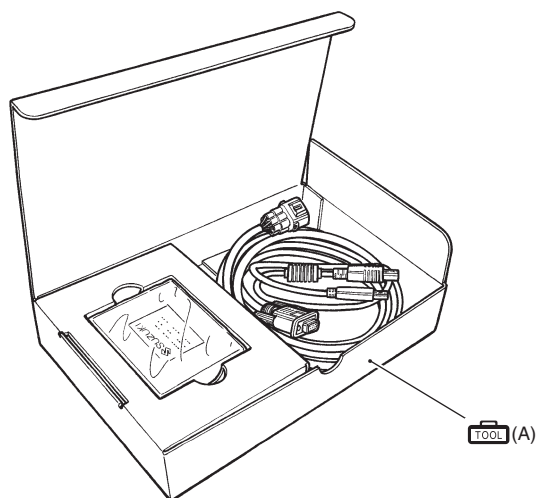
- 2) Set up the SDS tool. (Refer to the SDS operation manual for further details.)

Special tool

- TOOL (A): 09904-41010 (SUZUKI Diagnostic system set)
- TOOL (B): 99565-01010-020 (CD-ROM Ver.20)



I931G3630019-01



- 3) Read the DTC (Diagnostic Trouble Code) and show data when trouble (displaying data at the time of DTC) according to instructions displayed on SDS.

NOTE

- Not only is SDS used for detecting Diagnostic Trouble Codes but also for reproducing and checking on screen the failure condition as described by customers using the trigger.
- How to use trigger. (Refer to the SDS operation manual for further details.)
- When DTC is checked, DTC "C1122" is displayed with ignition switch turned ON. However, if the engine is started and the display disappears, it is not a trouble.

File View Tool Help	
F1	Clear F3 F4
Code	Description & trouble position
Current DTC - 1	
C1122	Engine speed signal malfunction
Past DTC - NIL	



File View Tool Help	
F1	Clear F3 F4
Code	Description & trouble position
Current DTC - NIL	
Past DTC - NIL	

I931H1630032-01

- 4) Close the SDS tool and turn the ignition switch OFF.

DTC (Diagnostic Trouble Code) Deleting (LT-A750XP/ZK9)

B931G36304005

Use of Mode Select Switch

- 1) Remove the seat. Refer to "Seat Removal and Installation in Section 9D in related manual".

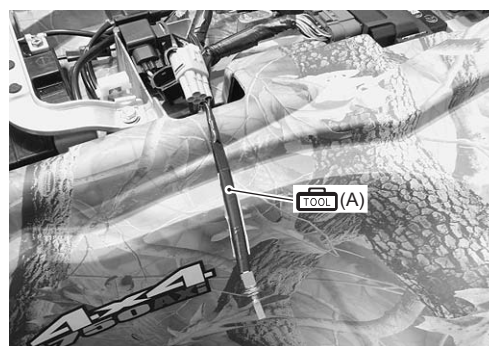


I931G3630020-01

- 2) Connect the special tool to the mode select coupler and output the DTCs.

Special tool

TOOL (A): 09930-82720 (Mode selection switch)



I931G3630021-01

- 3) While the DTCs are being output, set the special tool to OFF.

⚠ CAUTION

The DTC deletion mode starts 11.5 seconds after the switch is set to OFF.



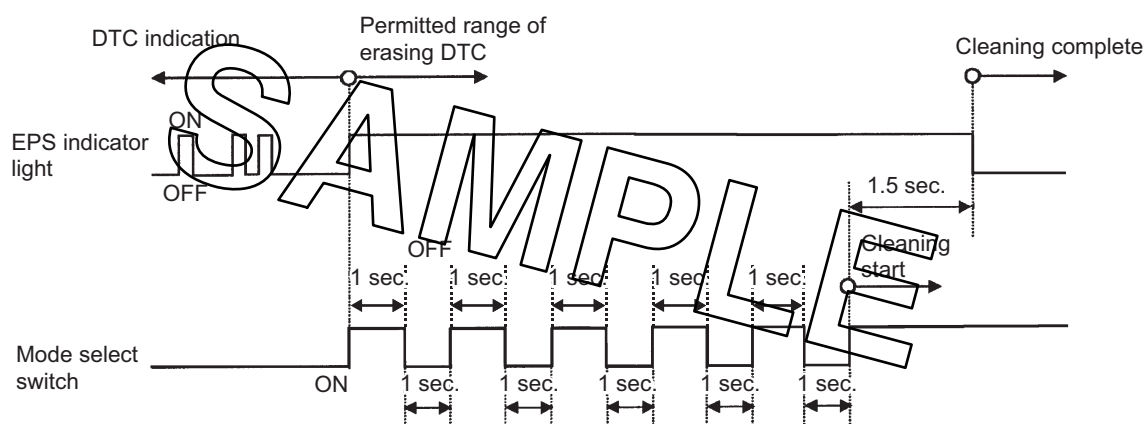
I718H1450050-01

- 4) In the DTC deletion mode, switch the mode coupler switch OFF to ON five times or more within 10 seconds, each time leaving it at ON for more than 1 second.



I718H1450051-01

DTC Deleting Diagram



I931H1630035-04

- 5) After deleting the DTCs, repeat the code output procedure and make sure that no DTCs remain (the EPS indicator light no longer flashes).

NOTE

If any DTCs remain, perform the appropriate procedures, then delete the codes. If DTCs are left stored, confusion may occur and unnecessary repairs may be made.

- 6) Afterwards, start the engine and turn the handlebars to check that the EPS activates correctly.
7) Disconnect the mode select switch and reinstall the seat.

Use of SDS

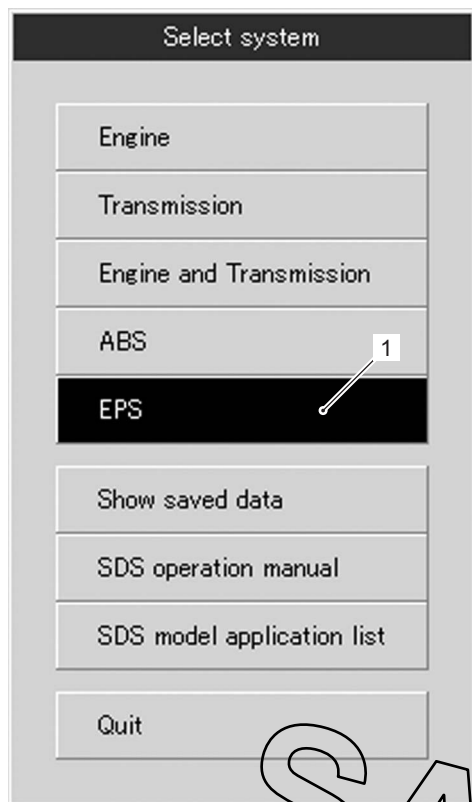
- 1) Remove the seat. Refer to "Seat Removal and Installation in Section 9D in related manual".
- 2) After repairing the trouble, turn OFF the ignition switch.
- 3) Set up the SDS tool. (Refer to the SDS operation manual for further details.)

Special tool

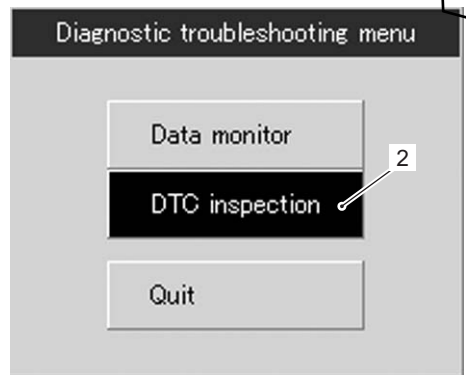
- : 09904-41010 (SUZUKI Diagnostic system set)
 : 99565-01010-020 (CD-ROM Ver.20)

- 4) Turn the ignition switch ON.

5) Click the "EPS" button (1).



6) Click the "DTC inspection" button (2).



7) Check the DTC.

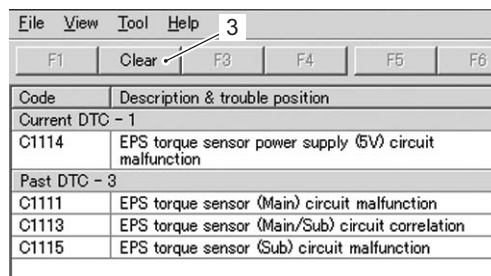
NOTE

The previous malfunction history code (Past DTC) still remains stored in the EPS control unit. Therefore, erase the history code memorized in the EPS control unit using SDS tool.

8) Click "Clear" (3) to delete history code (Past DTC).

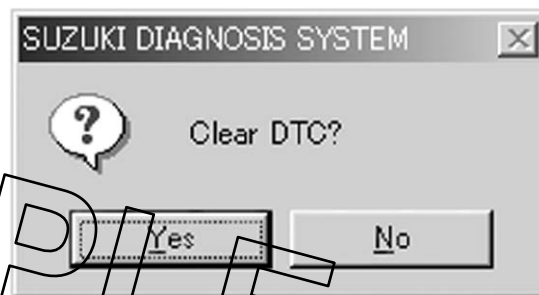
NOTE

The DTC is memorized in the EPS control unit also when the wire coupler of any sensor is disconnected. Therefore, when a wire coupler has been disconnected at the time of diagnosis, erase the stored malfunction history code using SDS.



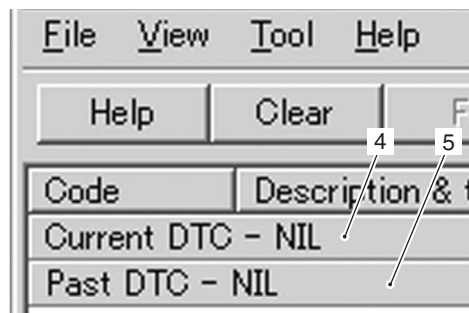
I931H1630036-02

9) Follow the displayed instructions.



I705H1110006-01

10) Check that both "Current DTC" (4) and "Past DTC" (5) are deleted (NIL).



I931H1630102-01

11) Close the SDS tool and turn the ignition switch OFF.

12) Disconnect the SDS tool and install the sheet.

13) Start the engine and the handlebars to check that the EPS activates correctly.

SDS Check (LT-A750XP/ZK9)

B931G36304006

Using SDS, take the sample of data from the new vehicle and at the time of periodic maintenance at your dealer. Save the data in the computer or by printing and filing the hard copies. The saved or filed data are useful for troubleshooting as they can be compared periodically with changes over time or failure conditions of the vehicle. For example, when a vehicle is brought in for service but the troubleshooting is difficult, comparison with the normal data that have been saved or filed can allow the specific EPS failure to be determined.


- 1) Remove the seat. Refer to "Seat Removal and Installation in Section 9D in related manual".
- 2) Set up the SDS tool. (Refer to "SDS operation manual for further details.)

NOTE

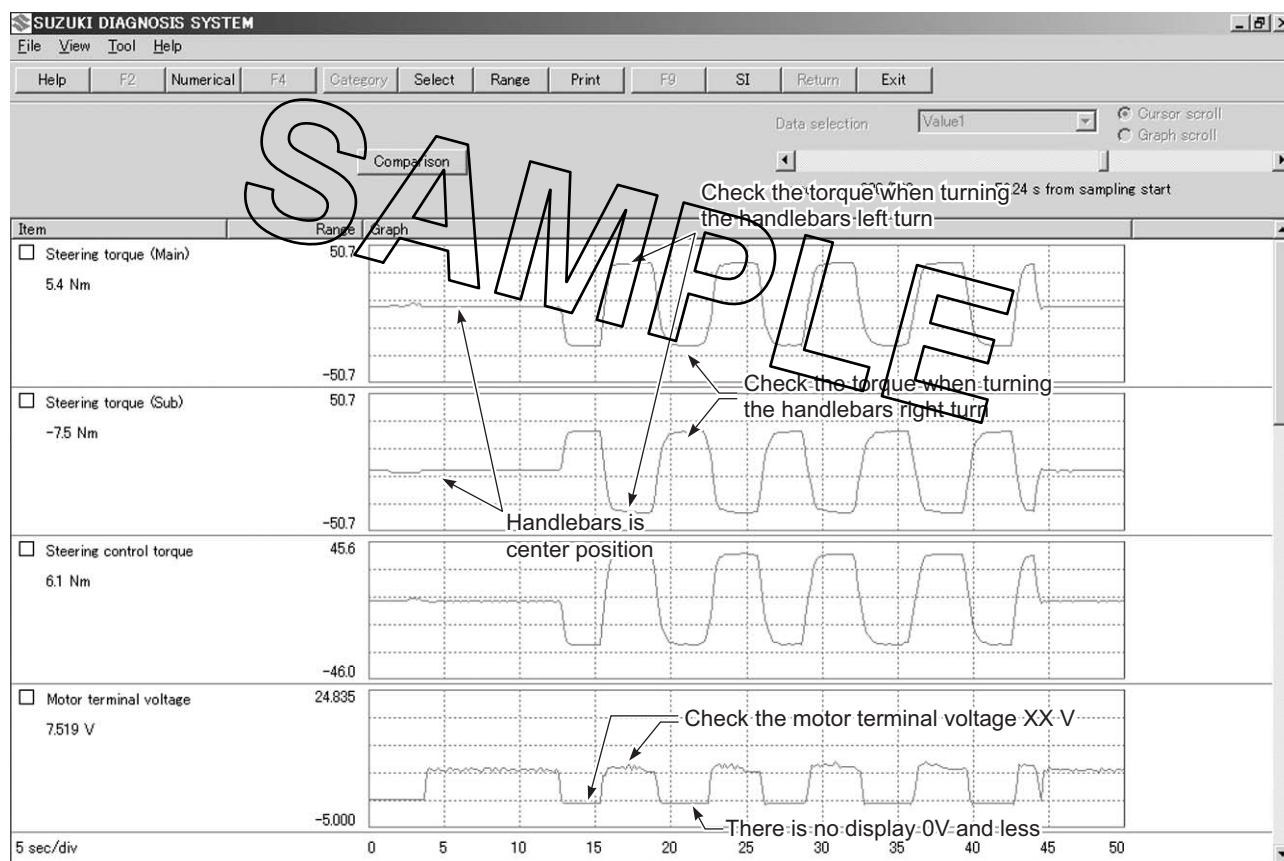
- Before taking the sample of data, check and clear the Past DTC. Refer to "DTC (Diagnostic Trouble Code) Deleting (LT-A750XP/ZK9) (Page 6C-21)".
- A number of different data under a fixed condition as shown should be saved or filed as sample.

Special tool

 : 09904-41010 (SUZUKI Diagnostic system set)

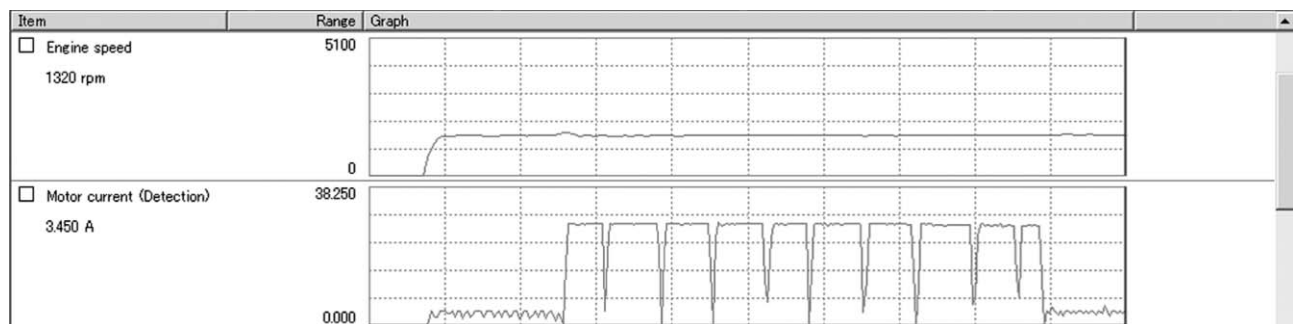
 : 99565-01010-020 (CD-ROM Ver.20)

DATA sampled from EPS system



I931H1630104-03

Scroll the screen



I931G3630066-01

DTC Table (LT-A750XP/ZK9)

B931G36304007

DTC	Malfunction cause	Indicator status	Reference
None	Normal	ON *1	—
C1111	Torque sensor (main) circuit voltage failure	ON	Refer to "DTC "C1111": Torque Sensor (Main) Circuit Malfunction (LT-A750XP/ZK9) (Page 6C-26)".
C1113	Torque sensor (main) and (sub) circuit voltage difference high	ON	Refer to "DTC "C1113": Torque Sensor (Main / Sub) Circuit Correlation Malfunction (LT-A750XP/ZK9) (Page 6C-29)".
C1114	Torque sensor 5 V power supply circuit failure	ON	Refer to "DTC "C1114": Torque Sensor Power Supply Circuit Malfunction (LT-A750XP/ZK9) (Page 6C-33)".
C1115	Torque sensor (sub) circuit voltage failure	ON	Refer to "DTC "C1115": Torque Sensor (Sub) Circuit Malfunction (LT-A750XP/ZK9) (Page 6C-35)".
C1121	Vehicle speed signal not input	OFF	Refer to "DTC "C1121": Vehicle Speed Signal Circuit Malfunction (LT-A750XP/ZK9) (Page 6C-38)".
C1122	Engine speed signal circuit failure *1	ON	Refer to "DTC "C1122": Engine Speed Signal Circuit Malfunction (LT-A750XP/ZK9) (Page 6C-41)".
C1141	EPS motor circuit voltage abnormal	ON	Refer to "DTC "C1141", "C1142", "C1143", "C1145" EPS Motor Circuit Malfunction (LT-A750XP/ZK9) (Page 6C-44)".
C1142	EPS motor circuit actual current and EPS motor circuit target current difference high	ON	
C1143	EPS motor circuit current excessive	ON	
C1145	EPS motor circuit current low command with EPS control unit target current	ON	
C1153	EPS control unit power supply circuit failure	OFF	Refer to "DTC "C1153" EPS Control Unit Supply Voltage Circuit Malfunction (LT-A750XP/ZK9) (Page 6C-46)".
C1152	Relay welding (EPS control unit internal circuit)	ON	Refer to "DTC "C1152", "C1154", "C1155" EPS Control Unit Malfunction (LT-A750XP/ZK9) (Page 6C-47)".
C1154	Relay failure (EPS control unit internal circuit)	OFF	
C1155	EPS control unit failure	OFF	

*1: It goes off after running the engine.

DTC “C1111”: Torque Sensor (Main) Circuit Malfunction (LT-A750XP/ZK9)

B931G36304008

Possible Cause
<ul style="list-style-type: none">Faulty torque sensor signal circuit.Faulty torque sensor.Faulty EPS control unit.

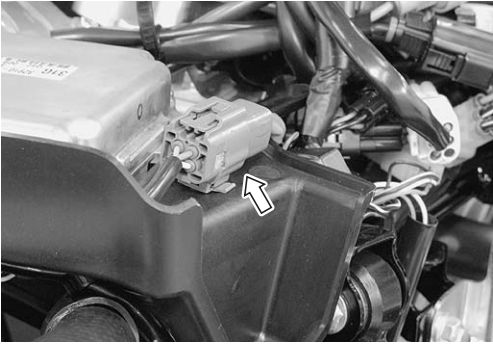

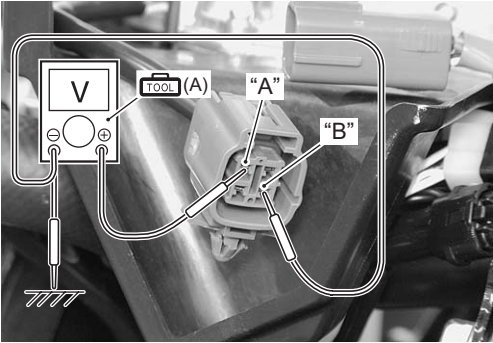
Troubleshooting**⚠ CAUTION**

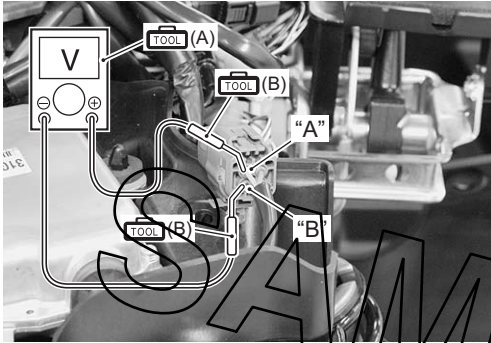

Never remove the torque sensor to prevent accident and damage.

NOTE

- After repairing the trouble, clear the DTC using a SDS tool or mode coupler switch. Refer to “DTC (Diagnostic Trouble Code) Deleting (LT-A750XP/ZK9) (Page 6C-21)”.
- DTC “C1111” and “C1113” are indicated at the same time due to the malfunction of the same torque sensor circuit.

SAMPLE

Step	Action	Yes	No
1	<div>1) Turn the ignition switch OFF.</div> <div>2) Check the torque sensor coupler for loose or poor contact. If OK, measure the torque sensor input voltage.</div> <div><div>I931G3630022-01</div></div> <div>3) Disconnect the torque sensor coupler.</div> <div>4) Turn the ignition switch ON.</div> <div>5) Measure the input voltage between R wire "A" and ground. If OK, then measure the voltage at the R wire "A" and B wire "B".</div> <div><div>Special tool</div><div> (A): 09900-25008 (Multi circuit tester set)</div><div>Tester knob indication</div><div>Voltage (---)</div><div>Torque sensor input voltage</div><div>5.0 V</div></div> <div><div>I931G3630024-01</div></div> <div>Is voltage OK?</div>	Go to Step 2.	<ul style="list-style-type: none">Loose or poor contacts on the torque sensor.Power supply circuit (R wire) or ground circuit (B wire) open.If check result is not satisfactory, replace the EPS control unit with a new one. Refer to "EPS Control Unit Removal and Installation (LT-A750XP/ZK9) (Page 6C-48)".

Step	Action	Yes	No
2	<p>1) Turn the ignition switch OFF.</p> <p>2) Connect the torque sensor coupler.</p> <p>3) Insert the needle-point probes to lead wire coupler.</p> <p>4) Turn the ignition switch ON.</p> <p>5) Measure the voltage between G wire "A" and B wire "B" by turning the handlebars left and right.</p> <p>Special tool TOOL (A): 09900-25008 (Multi circuit tester set) TOOL (B): 09900-25009 (Needle-point probe set)</p> <p>Tester knob indication Voltage (---)</p> <p>Torque sensor (main) voltage Handlebars is left turn: Approx. 3.0 V Handlebars is right turn: Approx. 2.0 V</p> <div data-bbox="334 726 821 1066">  <p>931G3630025-01</p> </div> <div data-bbox="347 1121 812 1251">  <p>I931H1630042-01</p> </div> <p><i>Is voltage OK?</i></p>	<ul style="list-style-type: none"> Replace the EPS control unit with a known good one, and inspect it again. Refer to "EPS Control Unit Removal and Installation (LT-A750XP/ZK9) (Page 6C-48)". 	<ul style="list-style-type: none"> R wire terminal or G wire terminal circuit open (torque sensor side). If check result is not satisfactory, replace the torque sensor (EPS body assembly) with a new one. Refer to "EPS Body Assembly Removal and Installation (LT-A750XP/ZK9) (Page 6C-50)".

DTC “C1113”: Torque Sensor (Main / Sub) Circuit Correlation Malfunction (LT-A750XP/ZK9)

B931G36304009

Possible Cause
<ul style="list-style-type: none">Faulty torque sensor signal circuit.Faulty torque sensor.Faulty EPS control unit.

Troubleshooting

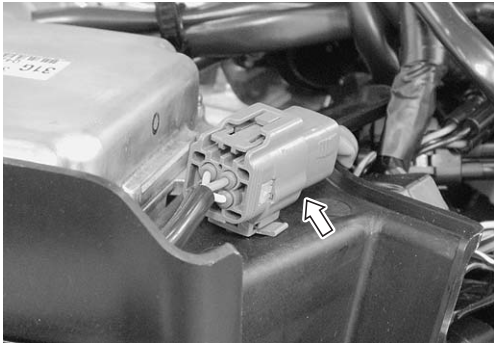
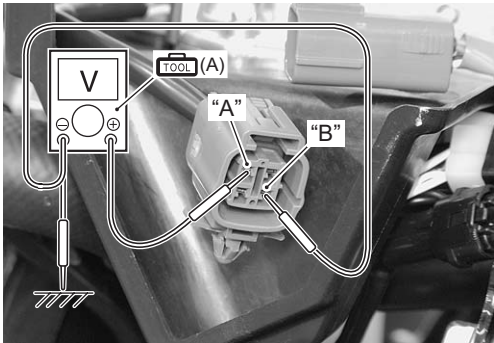
⚠ CAUTION

Never remove the torque sensor to prevent accident and damage.


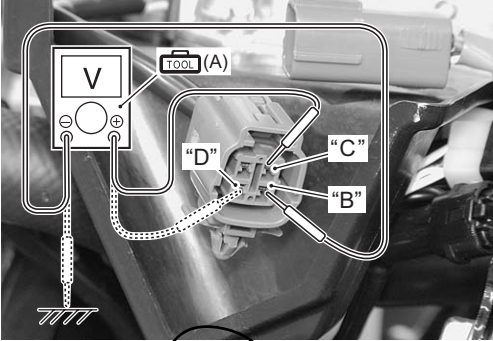
NOTE

-
- After repairing the trouble, clear the DTC using a SDS tool or mode coupler switch. Refer to “DTC (Diagnostic Trouble Code) Deleting (LT-A750XP/ZK9) (Page 6C-21)”.
 - DTC “C1113” and “C1115” are indicated at the same time due to the malfunction of the same torque sensor circuit.
-

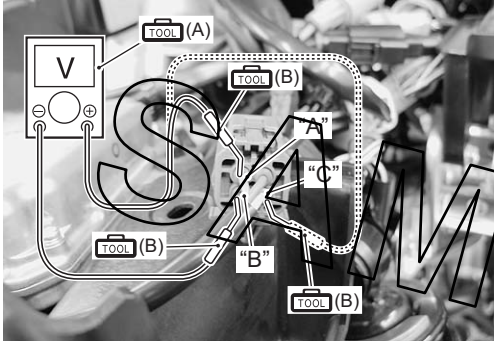

SAMPLE

Step	Action	Yes	No
1	<p>1) Turn the ignition switch OFF.</p> <p>2) Check the torque sensor coupler for loose or poor contact. If OK, measure the torque sensor input voltage.</p>  <p>I931G3630026-01</p> <p>3) Disconnect the torque sensor coupler.</p> <p>4) Turn the ignition switch ON.</p> <p>5) Measure the input voltage between R wire "A" and ground. If OK, then measure the voltage at the R wire "A" and B wire "B".</p> <p>Special tool TOOL (A): 09900-25608 (Multi circuit tester set)</p> <p>Tester knob indication Voltage (---)</p> <p>Torque sensor input voltage 5.0 V</p>  <p>I931G3630027-01</p>	Go to Step 2.	<ul style="list-style-type: none"> Loose or poor contacts on the torque sensor. Power supply circuit (R wire) open. Power source or power supply circuit shorted to torque sensor (main or sub) circuit. Torque sensor (main or sub) circuit open. If check result is not satisfactory, replace the EPS control unit with a new one. Refer to "EPS Control Unit Removal and Installation (LT-A750XP/ZK9) (Page 6C-48)".

6C-31 Power Assisted Steering System:

Step	Action	Yes	No
1	<div>6) Next, measure the voltage between G wire "C" and ground, G wire "C" and B wire "B", W wire "D" and ground and W wire "D" and B wire "B". If the voltage of each measurement is 0 V OK.</div> <div>Special tool  (A): 09900-25008 (Multi circuit tester set)</div> <div>Tester knob indication Voltage (---)</div> <div>Measuring voltage 0 V</div> <div></div> <div>Is voltage OK?</div>	Go to Step 2.	<ul style="list-style-type: none">• Loose or poor contacts on the torque sensor.• Power supply circuit (R wire) open.• Power source or power supply circuit shorted to torque sensor (main or sub) circuit.• Torque sensor (main or sub) circuit open.• If check result is not satisfactory, replace the EPS control unit with a new one. Refer to "EPS Control Unit Removal and Installation (LT-A750XP/ZK9) (Page 6C-48)".

SAMPLE

Step	Action	Yes	No
2	<p>1) Turn the ignition switch OFF.</p> <p>2) Connect the torque sensor coupler.</p> <p>3) Insert the needle-point probes to lead wire coupler.</p> <p>4) Measure the torque sensor (main) voltage between G wire "A" and B wire "B". Also, measure the torque sensor (sub) voltage between W wire "C" and B wire "B" by full turning the handlebars left and right.</p> <p>Special tool TOOL (A): 09900-25008 (Multi circuit tester set) TOOL (B): 09900-25009 (Needle-point probe set)</p> <p>Tester knob indication Voltage (---)</p> <p>Torque sensor (main/sub) voltage Handlebars left turn (Main): Approx. 3.0 V Handlebars left turn (Sub): Approx. 2.0 V Handlebars right turn (Main): Approx. 2.0 V Handlebars right turn (Sub): Approx. 3.0 V</p>  <p>I931H1630096-06</p>  <p>I931H1630042-01</p> <p><i>Is voltage OK?</i></p>	<ul style="list-style-type: none"> • G, W and B wire open or shorted to ground or poor torque sensor coupler connection. • If wire and connection are OK, intermittent trouble or faulty EPS control unit. • Replace the EPS control unit with a known good one, and inspect it again. Refer to "EPS Control Unit Removal and Installation (LT-A750XP/ZK9) (Page 6C-48)". 	<p>If check result is not satisfactory, replace the torque sensor (EPS body assembly) with a new one. Refer to "EPS Body Assembly Removal and Installation (LT-A750XP/ZK9) (Page 6C-50)".</p>

DTC “C1114”: Torque Sensor Power Supply Circuit Malfunction (LT-A750XP/ZK9)

B931G36304010

Possible Cause
<ul style="list-style-type: none">• Faulty torque sensor signal circuit.• Faulty torque sensor.• Faulty EPS control unit.

Troubleshooting


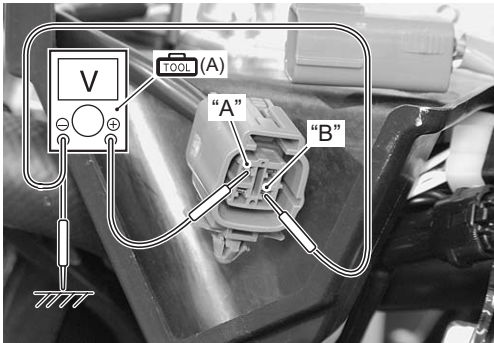
⚠ CAUTION

Never remove the torque sensor to prevent accident and damage.

NOTE

After repairing the trouble, clear the DTC using a SDS tool or mode coupler switch. Refer to “DTC (Diagnostic Trouble Code) Deleting (LT-A750XP/ZK9) (Page 6C-21)”.

SAMPLE

Step	Action	Yes	No
1	<p>1) Turn the ignition switch OFF.</p> <p>2) Check the EPS control unit power source couplers for loose or poor contact. If OK, measure the torque sensor input voltage.</p>  <p style="text-align: right; font-size: small;">I931G3630029-01</p> <p>3) Disconnect the torque sensor coupler.</p> <p>4) Turn the ignition switch ON.</p> <p>5) Measure the voltage between R wire "A" and B wire "B". If OK, then measure the voltage at the R wire "A" and ground.</p> <p>Special tool TOOL (A): 09900-25008 (Multi circuit tester set)</p> <p>Tester knob indication Voltage (---)</p> <p>Torque sensor input voltage 5.0 V</p>  <p style="text-align: right; font-size: small;">I931G3630027-01</p> <p><i>Is voltage OK?</i></p>	<ul style="list-style-type: none"> • If wire and connection are OK, intermittent trouble or faulty EPS body assembly. • Replace the EPS body assembly with a known good one, and inspect it again. Refer to "EPS Body Assembly Removal and Installation (LT-A750XP/ZK9) (Page 6C-50)". 	<ul style="list-style-type: none"> • Power supply circuit (R wire) shorted to ground. • If check result is not satisfactory, replace the EPS control unit with a new one. Refer to "EPS Control Unit Removal and Installation (LT-A750XP/ZK9) (Page 6C-48)".

DTC “C1115”: Torque Sensor (Sub) Circuit Malfunction (LT-A750XP/ZK9)

B931G36304011

Possible Cause
<ul style="list-style-type: none">• Faulty torque sensor signal circuit.• Faulty torque sensor.• Faulty EPS control unit.

Troubleshooting

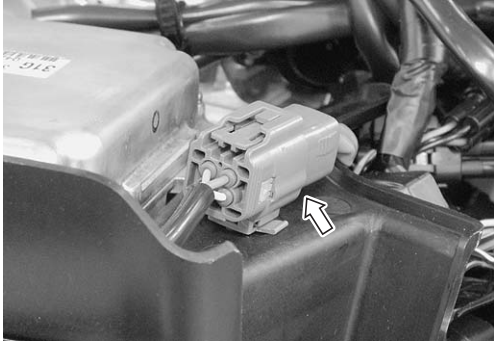
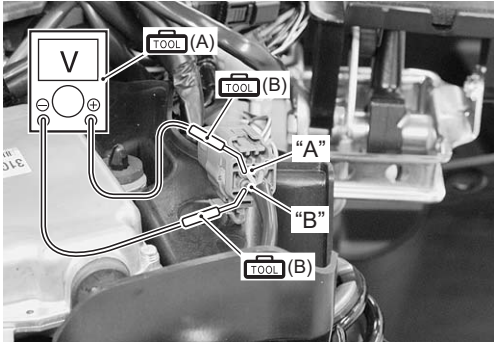
⚠ CAUTION



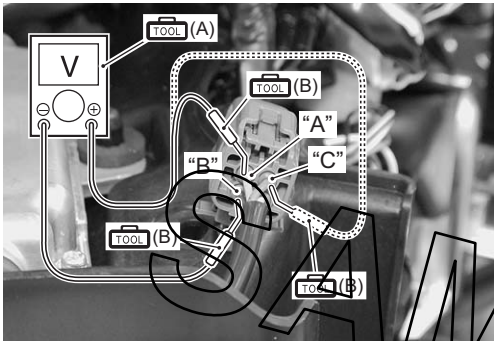

Never remove the torque sensor to prevent accident and damage.

NOTE

After repairing the trouble, clear the DTC using a SDS tool or mode coupler switch. Refer to “DTC (Diagnostic Trouble Code) Deleting (LT-A750XP/ZK9) (Page 6C-21)”.

SAMPLE

Step	Action	Yes	No
1	<p>1) Turn the ignition switch OFF.</p> <p>2) Check the torque sensor coupler for loose or poor contact. If OK, measure the torque sensor input voltage.</p>  <p>I931G3630026-01</p> <p>3) Disconnect the torque sensor coupler.</p> <p>4) Turn the ignition switch ON.</p> <p>5) Measure the input voltage between R wire "A" and ground. If OK, then measure the input voltage between R wire "A" and B wire "B".</p> <p>Special tool</p> <p>TOOL (A): 09900-25008 (Multi circuit tester set)</p> <p>TOOL (B): 09900-25009 (Needle-point probe set)</p> <p>Tester knob indication</p> <p>Voltage (---)</p> <p>Torque sensor input voltage</p> <p>5.0 V</p>  <p>I931G3630032-01</p> <p><i>Is voltage OK?</i></p>	Go to step 2.	<ul style="list-style-type: none"> Loose or poor contacts on the torque sensor. Power supply circuit (R wire) or ground circuit (B wire) open. If check result is not satisfactory, replace the EPS control unit with a new one. Refer to "EPS Control Unit Removal and Installation (LT-A750XP/ZK9) (Page 6C-48)".

Step	Action	Yes	No
2	<p>1) Turn the ignition switch OFF.</p> <p>2) Connect the torque sensor coupler.</p> <p>3) Insert the needle-point probes to lead wire coupler.</p> <p>4) Turn the ignition switch ON.</p> <p>5) Measure the voltage between W wire "A" and B wire "B" by turning the handlebars left and right.</p> <p>Special tool</p> <p> (A): 09900-25008 (Multi circuit tester set)</p> <p> (B): 09900-25009 (Needle-point probe set)</p> <p>Tester knob indication</p> <p>Voltage (---)</p> <p>Torque sensor (Sub) voltage</p> <p>Handlebars is left turn: Approx. 2.0 V</p> <p>Handlebars is right turn: Approx 3.0 V</p>   <p><i>Is voltage OK?</i></p>	<ul style="list-style-type: none"> Replace the EPS control unit with a known good one, and inspect it again. Refer to "EPS Control Unit Removal and Installation (LT-A750XP/ZK9) (Page 6C-48)". 	<ul style="list-style-type: none"> R wire terminal or W wire terminal circuit open (torque sensor side). If check result is not satisfactory, replace the torque sensor (EPS body assembly) with a new one. Refer to "Steering Shaft Removal and Installation in Section 6B in related manual".

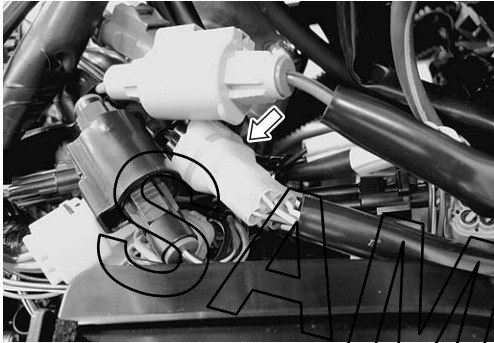
DTC “C1121”: Vehicle Speed Signal Circuit Malfunction (LT-A750XP/ZK9)

B931G36304012



Possible Cause
<ul style="list-style-type: none"> Faulty vehicle speed signal circuit. Faulty speed sensor. Faulty EPS control unit.

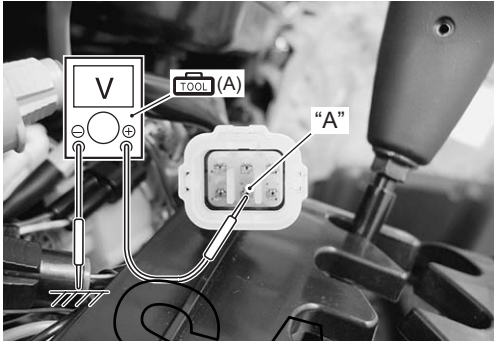
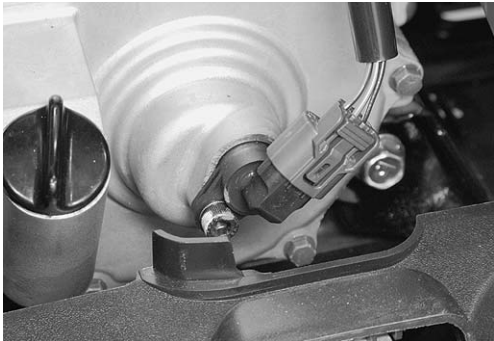
Troubleshooting**NOTE**

After repairing the trouble, clear the DTC using a SDS tool or mode coupler switch. Refer to “DTC (Diagnostic Trouble Code) Deleting (LT-A750XP/ZK9) (Page 6C-21)”.

Step	Action	Yes	No
1	1) Turn the ignition switch OFF. 2) Check the EPS control unit connector for loose or poor contact. If OK, then check the vehicle speed signal lead wire continuity. 	Go to step 2.	BI/B wire open.

193/G3630/31-01

Step	Action	Yes	No
1	<div>3) Disconnect the EPS control unit coupler [B], speed sensor coupler [C] and combination meter coupler [A]. Refer to “Speed Sensor Removal and Installation in Section 9C in related manual” and “Combination Meter Removal and Installation in Section 9C in related manual”.</div> <div>4) Check the continuity between the BI/B wire of EPS control unit coupler [B] and BI/B wire of speed sensor [C]. Also, check the continuity between the BI/B wire of EPS control unit coupler [B] and BI/B wire of combination meter [A].</div> <div>Special tool  (A): 09900-25008 (Multi circuit tester set)  (B): 09900-25009 (Needle-point probe set)</div> <div>Tester knob indication Continuity (●)))</div> <div><p>I931H1630050-03</p></div> <div>Is continuity OK?</div>	Go to step 2.	BI/B wire open.

Step	Action	Yes	No
2	<p>1) Connect the combination meter coupler and speed sensor coupler.</p> <p>2) Turn the ignition switch ON.</p> <p>3) Measure the voltage between the BI/B wire "A" and ground.</p> <p>Special tool TOOL (A): 09900-25008 (Multi circuit tester set)</p> <p>Tester knob indication Voltage (---)</p> <p>Vehicle speed signal voltage 5.0 V</p>  <p>I931G3630033-01</p> <p><i>Is voltage OK?</i></p>	Go to step 3.	BI/B wire shorted to ground.
3	<p>1) Remove the engine side cover. Refer to "Rear Side Exterior Parts Removal and Installation in Section 9D in related manual".</p> <p>2) Inspect the speed sensor. Refer to "Speed Sensor Inspection in Section 9C in related manual".</p>  <p>I931G3630034-01</p> <p><i>Is speed sensor OK?</i></p>	Replace the EPS control unit. Refer to "EPS Control Unit Removal and Installation (LT-A750XP/ZK9) (Page 6C-48)".	Replace the speed sensor. Refer to "Speed Sensor Removal and Installation in Section 9C in related manual".

DTC “C1122”: Engine Speed Signal Circuit Malfunction (LT-A750XP/ZK9)

B931G36304013

Possible Cause
<ul style="list-style-type: none">Faulty engine speed signal circuit.Faulty ECM.Faulty EPS control unit.



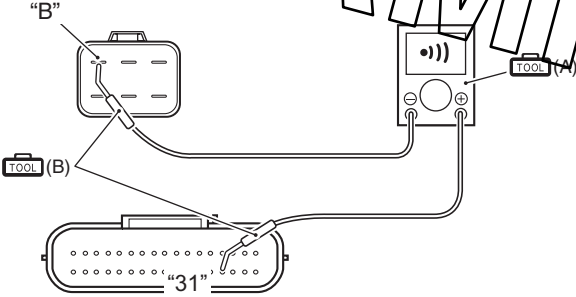
Troubleshooting


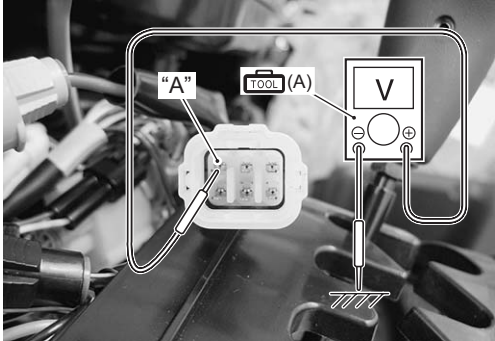
NOTE

Start the engine after repairing the DTC and check that the indicator light is turned OFF. Refer to “Precautions in Diagnosing Troubles (LT-A750XP/ZK9) (Page 6C-1)”.

Step	Action	Yes	No
1	1) Setup the SDS tool (Refer to the SDS operation manual for further details.) or connect the mode select switch. 2) Click “Engine” and check the DTC code. <i>Is not DTC “C12 (P0335)” displayed?</i>	Go to step 2.	Inspect the CKP sensor. Refer to “DTC “C12” (P0335): CKP Sensor Circuit Malfunction in Section 1A in related manual”.

SAMPLE

Step	Action	Yes	No
2	<div>1) Turn the ignition switch OFF.</div> <div>2) Check the EPS control unit coupler for loose or poor contact. If OK, then measure the engine speed signal lead wire continuity.</div> <div></div> <div>I931G3630031-01</div> <div>3) Disconnect the EPS control unit coupler and ECM coupler.</div> <div>4) Check the continuity between the W wire "A" and terminal "31".</div> <div>Special tool TOOL (A): 09900-25008 (Multi circuit tester set) TOOL (B): 09900-25009 (Needle-point probe set)</div> <div>Tester knob indication Continuity ()</div> <div></div> <div>I931H1630052-02</div> <div>Is continuity OK?</div>	Go to step 3.	W wire open.

Step	Action	Yes	No
3	<div>1) Connect the ECM coupler.</div> <div>2) Start the engine.</div> <div>3) Measure the voltage between W wire "A" and ground.</div> <div>Special tool</div> <div> (A): 09900-25008 (Multi circuit tester set)</div> <div>Tester knob indication</div> <div>Voltage (---)</div> <div>Engine speed signal voltage</div> <div>It changes between 0 – 12 V</div> <div></div> <div>Is voltage OK?</div>	Replace the EPS control unit with a new one. Refer to "EPS Control Unit Removal and Installation (LT-A750XP/ZK9) (Page 6C-48)".	Replace the ECM with a new one. Refer to "EPS Control Unit Removal and Installation (LT-A750XP/ZK9) (Page 6C-48)".

SAMPLE





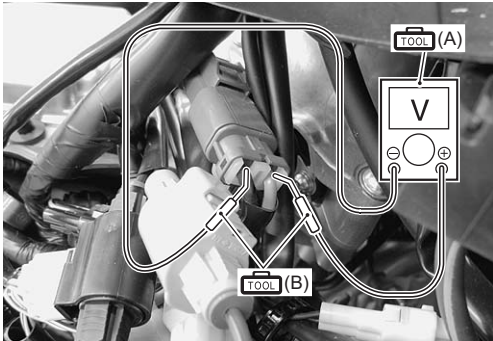
DTC “C1141”, “C1142”, “C1143”, “C1145” EPS Motor Circuit Malfunction (LT-A750XP/ZK9)

B931G36304014

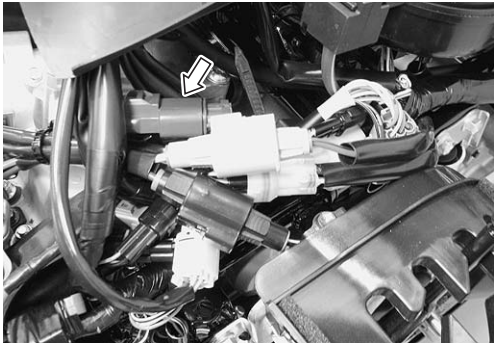
Possible Cause

- Faulty EPS motor circuit.
- Faulty EPS motor.
- EPS control unit malfunction.

Troubleshooting

Step	Action	Yes	No
1	<p>1) Turn the ignition switch OFF.</p> <p>2) Check the EPS motor coupler for loose or poor contact. If OK, measure the EPS motor voltage.</p>  <p>I931G3630036-01</p> <p>3) Insert the needle point probes to lead wire coupler.</p> <p>4) Start the engine and turn the handlebars left turn.</p> <p>5) Measure the voltage between R wire “A” and B wire “B”.</p> <p>Special tool</p> <p> (A): 09900-25008 (Multi circuit tester set)</p> <p> (B): 09900-25009 (Needle-point probe set)</p> <p>Tester knob indication</p> <p>Voltage (---)</p> <p>EPS motor voltage</p> <p>Approx. 7.0 V</p>  <p>I931H1630093-01</p>  <p>I931G3630037-01</p> <p><i>Is voltage OK?</i></p>	Go to step 2.	R wire or B wire open or R wire shorted to ground.

6C-45 Power Assisted Steering System:

Step	Action	Yes	No
2	<div>1) Turn the ignition switch OFF.</div> <div>2) Disconnect the EPS motor coupler.</div> <div></div> <div>I931G3630038-01</div> <div>3) Inspect the continuity of the EPS motor. Refer to “EPS Motor Inspection (LT-A750XP/ZK9) (Page 6C-53)”.</div> <div>Is continuity OK?</div>	Replace the EPS control unit with a known good one, and inspect it again. Refer to “EPS Control Unit Removal and Installation (LT-A750XP/ZK9) (Page 6C-48)”.	Replace the EPS motor (EPS body assembly) with a new one. Refer to “EPS Body Assembly Removal and Installation (LT-A750XP/ZK9) (Page 6C-50)”.

SAMPLE


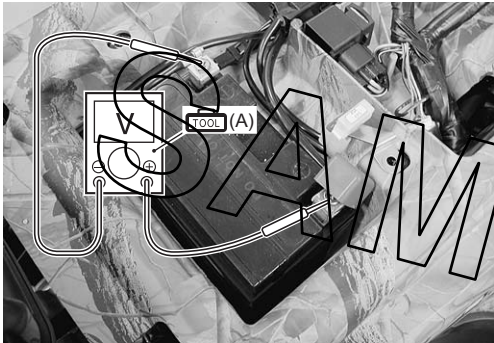

DTC “C1153” EPS Control Unit Supply Voltage Circuit Malfunction (LT-A750XP/ZK9)

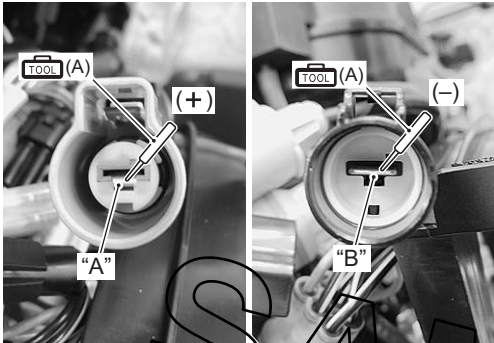
B931G36304015

Possible Cause

- Faulty regulator/rectifier.
- Faulty EPS control unit.
- Faulty wire harness, etc.

Troubleshooting

Step	Action	Yes	No
1	<p>1) Remove the seat. Refer to “Seat Removal and Installation in Section 9D in related manual”.</p> <p>2) Measure the voltage between the (+) and (–) battery terminals using the multi circuit tester.</p> <p>Special tool  (A): 09900–25008 (Multi circuit tester set)</p> <p>Tester knob indication Voltage (---)</p> <p>Battery voltage 12.0 V and more</p>  <p style="text-align: right;">I931G3630039-01</p> <p><i>Is the voltage over 12 V?</i></p>	Go to Step 2.	Charge or replace the battery.
2	<p>1) Start the engine at 5 000 r/min with the dimmer switch set to HI.</p> <p>2) Measure the voltage between the (+) and (–) battery terminals.</p> <p>Special tool  : 09900–25008 (Multi circuit tester set)</p> <p>Tester knob indication Voltage (---)</p> <p>Regulated voltage 13.5 – 15.0 V at 5 000 r/min</p> <p><i>Is the voltage 13.5 – 15.0 V?</i></p>	Go to Step 3.	Inspect the regulator/rectifier. Refer to “Regulator / Rectifier Inspection in Section 1J in related manual”.

Step	Action	Yes	No
3	<p>1) Turn the ignition switch OFF.</p> <p>2) Check the EPS control unit coupler for loose or poor contacts. If OK, then disconnect the EPS control unit coupler.</p> <p>3) Start the engine at 5 000 r/min with the dimmer switch set to HI.</p> <p>4) Measure the voltage between terminal "A" and terminal "B" at the coupler.</p> <p>Special tool TOOL (A): 09900-25008 (Multi circuit tester set)</p> <p>Tester knob indication Voltage (---)</p>  <p>Is the voltage same as Step 2?</p>	Replace the EPS control unit.	Inspect the wire harness. (Faulty ignition or ground wire)

DTC "C1152", "C1154", "C1155" EPS Control Unit Malfunction (LT-A750XP/ZK9)

B931G36304016

	Possible Cause
C1152	• Relay welding (EPS control unit internal circuit)
C1154	• Relay malfunction (EPS control unit internal circuit)
C1155	• EPS control unit malfunction

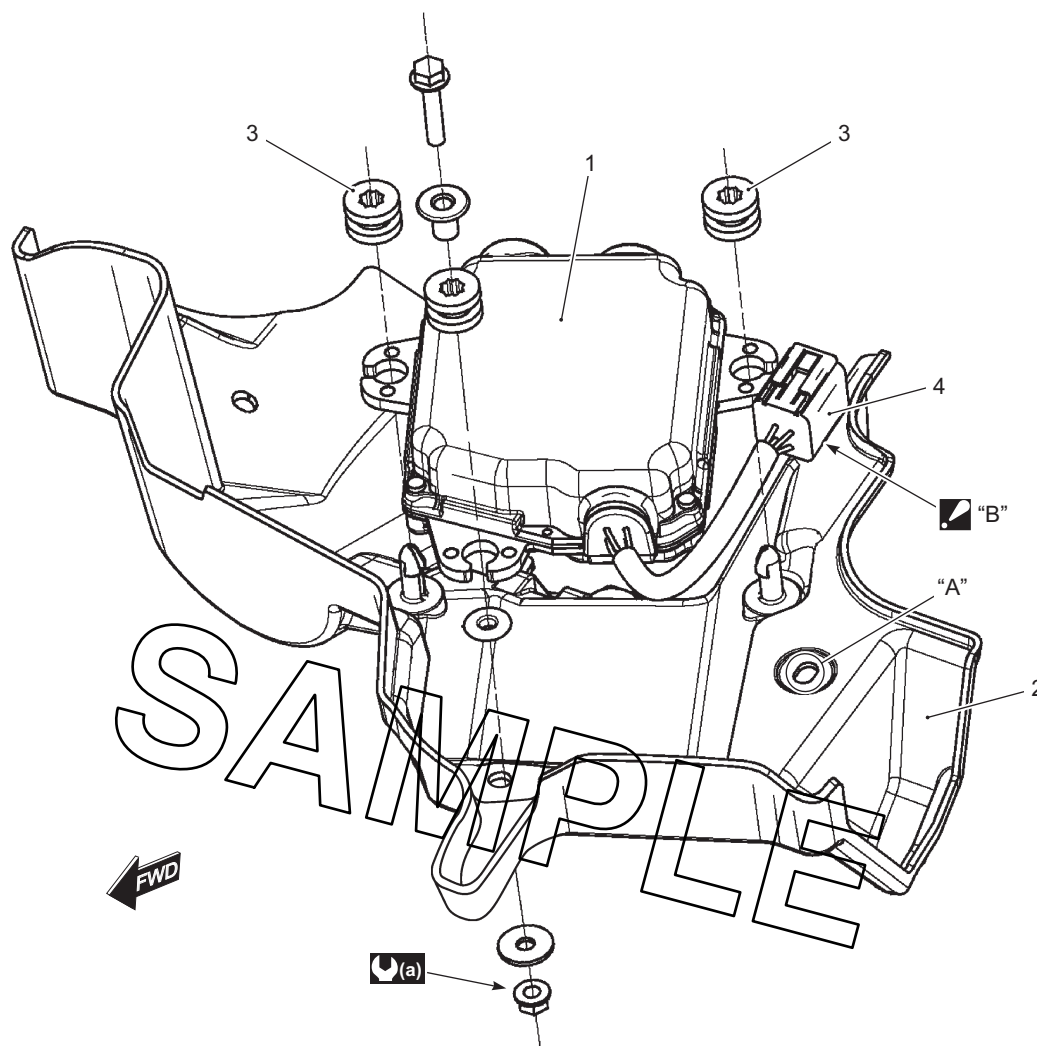
Troubleshooting

- Replace the EPS control unit. Refer to "EPS Control Unit Removal and Installation (LT-A750XP/ZK9) (Page 6C-48)".

Repair Instructions

EPS Control Unit Construction (LT-A750XP/ZK9)

B931G36306001



I931H1630056-02

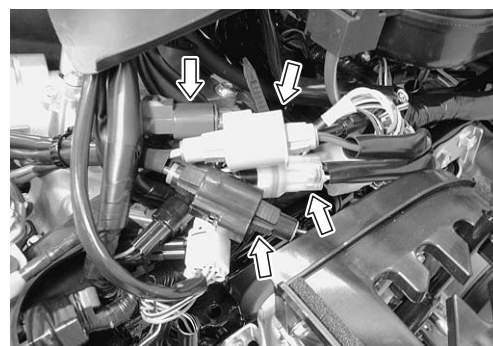
1. EPS control unit	4. Torque sensor coupler
2. EPS control unit plate	(a) : 12 N·m (1.2 kgf-m, 8.5 lbf-ft)
3. Cushion	"B": Install the clip of the torque sensor coupler to the hole "A" of the EPS control unit plate.

EPS Control Unit Removal and Installation (LT-A750XP/ZK9)

B931G36306002

Removal

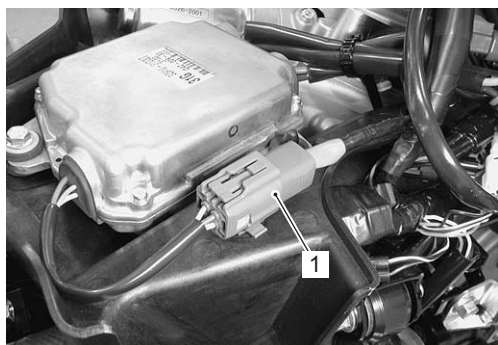
- 1) Disconnect the battery (–) lead wire. Refer to "Battery Removal and Installation (LT-A750XP/ZK9) in Section 1J (Page 1J-2)".
- 2) Remove the front fender. Refer to "Front Side Exterior Parts Removal and Installation in Section 9D in related manual".
- 3) Disconnect the EPS control unit couplers.



I931G3630041-01

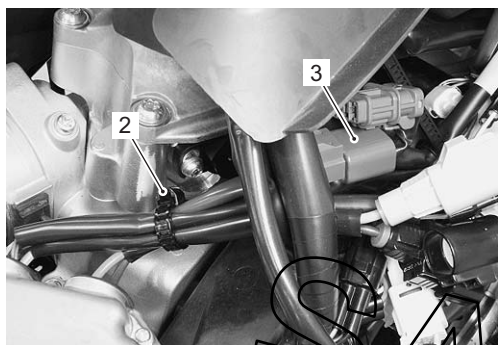
6C-49 Power Assisted Steering System:

- 4) Disconnect the torque sensor coupler (1).



I931G3630042-01


- 5) Remove the clamp (2) and release the EPS motor lead wire (3).

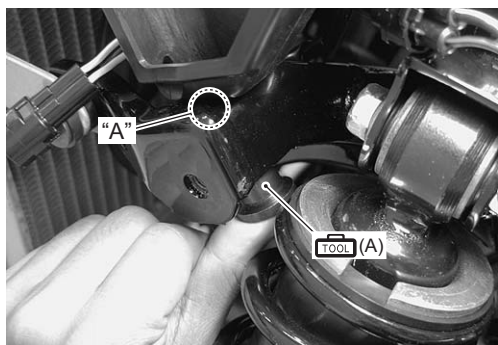


I931G3630043-01

- 6) Release the clip part "A" of the EPS control unit plate with the special tool.

Special tool

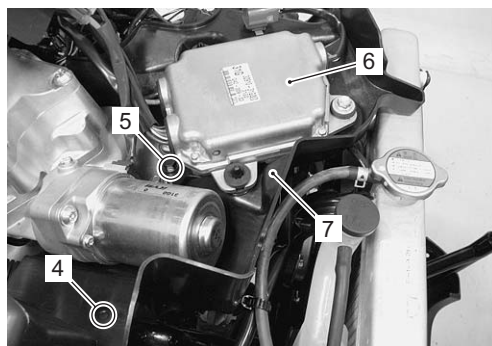
 (A): 09942-83110 (Clip remover)



I931G3630044-01

- 7) Remove the fastener (4) and bolt (5).

- 8) Remove the EPS control unit (6) along with the EPS control unit plate (7).



I931G3630045-01

- 9) Remove the EPS control unit (6) from the EPS control unit plate (7) as shown in the EPS control unit construction. Refer to "EPS Control Unit Construction (LT-A750XP/ZK9) (Page 6C-48)".

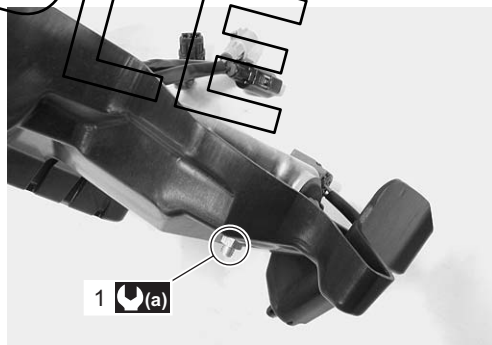
Installation

Install the EPS control unit in the reverse order of removal. Pay attention to the following points:

- Tighten the EPS control unit mounting nut (1) to the specified torque.

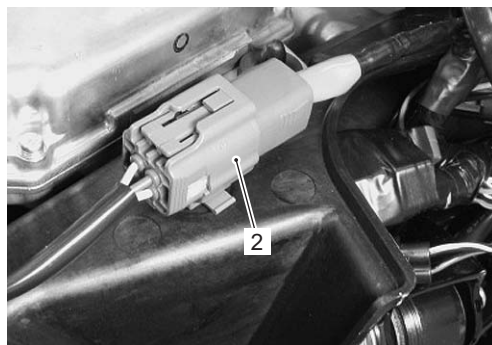
Tightening torque

EPS control unit mounting nut (a): 12 N·m (1.2 kgf-m, 8.5 lbf-ft)



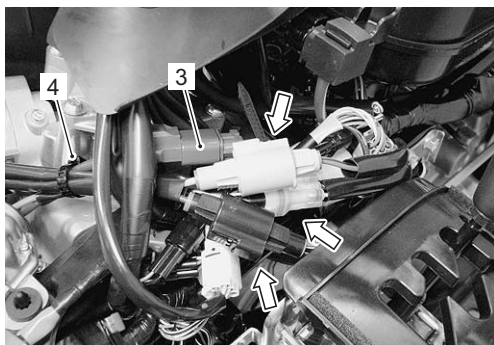
I931G3630046-01

- Connect the torque sensor lead wire (2).



I931G3630047-01

- Connect the EPS motor coupler (3) and clamp (4).
- Connect the other EPS control unit couplers.



I931G3630048-01

- Install the front fender. Refer to "Front Side Exterior Parts Removal and Installation in Section 9D in related manual".

EPS Body Assembly Components (LT-A750XP/ZK9)

B931G36306003

Refer to "Steering / Handlebars Components (LT-A750XP/ZK9) in Section 6B (Page 6B-1)".

EPS Body Assembly Removal and Installation (LT-A750XP/ZK9)

B931G36306004

Refer to "Steering / Handlebars Components (LT-A750XP/ZK9) in Section 6B (Page 6B-1)".
Refer to "Steering / Handlebars Assembly Construction (LT-A750XP/ZK9) in Section 6B (Page 6B-2)".

Removal

- 1) Remove the handlebars. Refer to "Handlebars Removal and Installation (LT-A750XP/ZK9) in Section 6B (Page 6B-3)".
- 2) Remove the combination meter. Refer to "Combination Meter Removal and Installation in Section 9C in related manual".
- 3) Remove the front fender. Refer to "Front Side Exterior Parts Removal and Installation in Section 9D in related manual".
- 4) Remove the auxiliary headlight (1). Refer to "Auxiliary Headlight Removal and Installation in Section 9B in related manual".



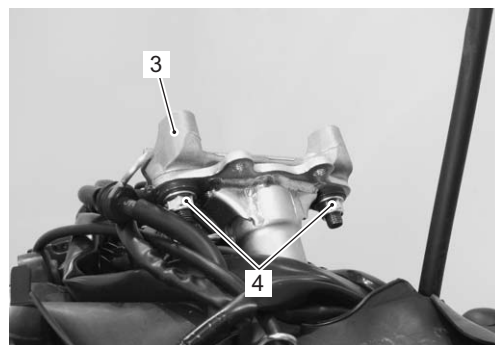
I931G3630049-01

- 5) Remove the center cover (2).



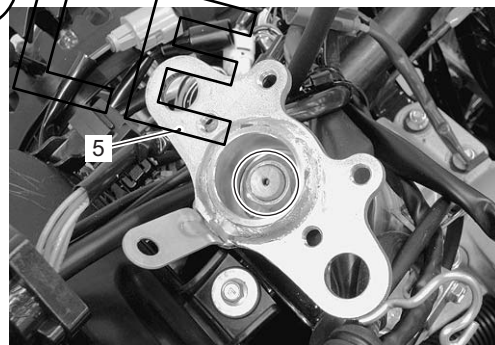
I931G3630050-01

- 6) Remove the handlebar holder (3) by removing the nuts (4).



I931G3630051-01


- 7) Remove the steering shaft upper nut (5).

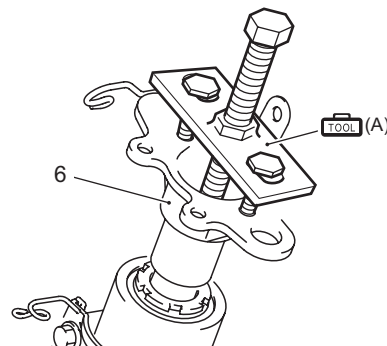


I931G3630068-01

- 8) Remove the steering shaft plate (6) with the special tool.

Special tool

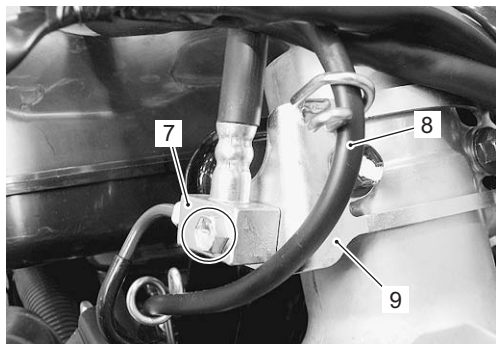
 (A): 09944-36011 (Steering wheel remover)



I931G3630052-01

6C-51 Power Assisted Steering System:

- 9) Remove the front brake hose union (7) and throttle cable (8) from the cable guide (9).



I931G3630053-01

- 10) Remove the steering shaft bolt (10).



I931G3630054-01

- 11) Remove the EPS body assembly mounting nuts and bolts.



I931G3630055-01

- 12) Remove the cable guide (11).



I931G3630056-01

- 13) Remove the EPS body assembly.

⚠ CAUTION

Never disassemble the EPS body assembly.




I931G3630057-02

Installation

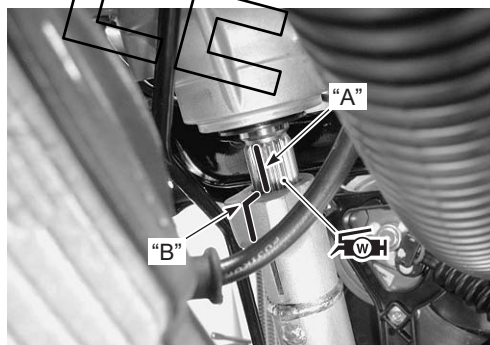
Refer to "Steering / Handlebars Assembly Construction (LT-A750XP/ZK9) in Section 6B (Page 6B-2)".

Install the EPS body assembly in the reverse order of removal. Pay attention to the following points:

- Apply grease to the spline of the EPS body assembly.

 **Grease 99000-25160 (Water resistance grease or equivalent)**

- When installing the EPS body assembly, align the marking "A" of the EPS output shaft and slide "B" of the steering shaft.

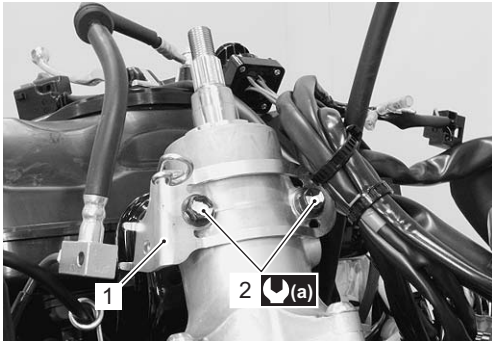


I931G3630058-02

- Install the cable guide (1) and tighten the bolts (2) to the specified torque.

Tightening torque

EPS body assembly mounting bolt (a): 26 N·m (2.6 kgf-m, 19.0 lbf-ft)



I931G3630059-02

- Tighten the EPS body assembly mounting nuts (3) to the specified torque.

Tightening torque

EPS body assembly mounting nut (b): 28 N·m (2.8 kgf-m, 20.0 lbf-ft)



I931G3630060-02

- Apply thread lock to the steering shaft bolt (4) and tighten it to the specified torque.

1303 : Thread lock cement 99000-32030 (THREAD LOCK CEMENT SUPER "1303" or equivalent)

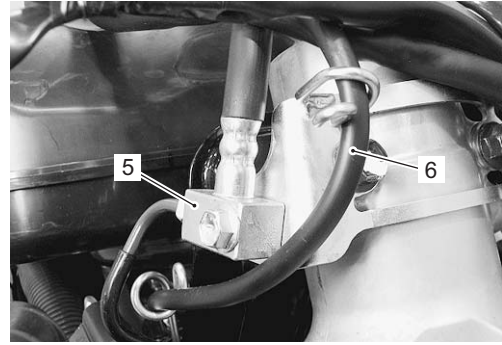
Tightening torque

Steering shaft bolt (c): 26 N·m (2.6 kgf-m, 19.0 lbf-ft)



I931G3630061-03

- Install the front brake hose union (5) and throttle cable (6) to the cable guide.



I931G3630062-02

- Apply grease to the spline of the EPS body assembly.

W : Grease 99000-25160 (Water resistance grease or equivalent)

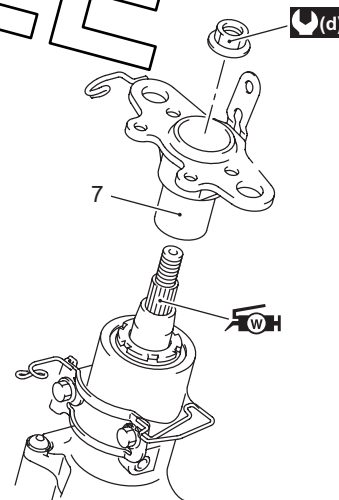
- Install the steering shaft plate (7) and tighten the steering shaft upper nut to the specified torque.

CAUTION

- Never use an impact wrench when tightening the steering shaft upper nut.
- Never exceed the specified torque to prevent EPS body assembly damage.

Tightening torque

Steering shaft upper nut (d): 120 N·m (12.0 kgf-m, 87.0 lbf-ft)



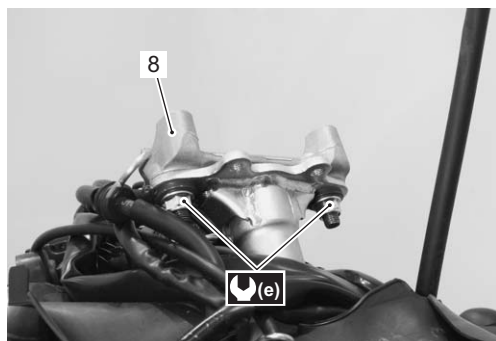
I931G3630072-01

6C-53 Power Assisted Steering System:

- Install the handlebar holder (8) and tighten the nuts to the specified torque.

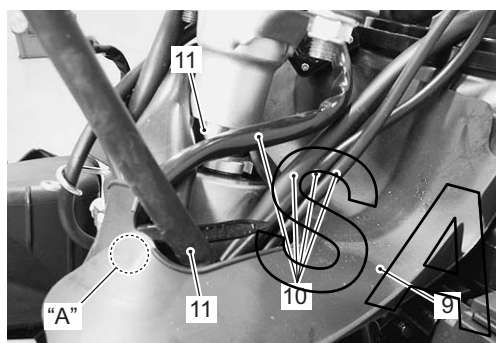
Tightening torque

Handlebar holder nut (e): 60 N·m (6.0 kgf-m, 43.5 lbf-ft)



I931G3630063-02

- Install the center cover (9).



I931G3630064-02

9. Center cover
10. Wiring harness (Left handlebar switch/Parking rear brake switch/ Parking rear brake light switch), (Emergency switch (For P-17) and horn switch (For P-17, 24))
11. Parking/Rear brake cable
12. Steering shaft
"A": Hooked point

- Install the auxiliary headlight. Refer to "Auxiliary Headlight Removal and Installation in Section 9B in related manual".
- Install the front fender. Refer to "Front Side Exterior Parts Removal and Installation in Section 9D in related manual".
- Install the handlebars. Refer to "Handlebars Removal and Installation (LT-A750XP/ZK9) in Section 6B (Page 6B-3)".
- Install the combination meter. Refer to "Combination Meter Removal and Installation in Section 9C in related manual".

EPS Motor Inspection (LT-A750XP/ZK9)

B931G36306005

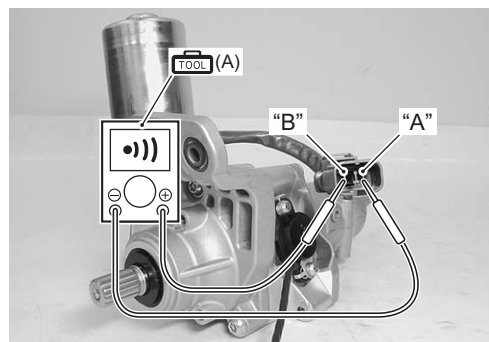
- Disconnect the EPS motor coupler.
- First, check for insulation with the tester between terminals "A" and "B".
If continuity does not exist, replace the EPS body assembly with a new one.

Special tool

TOOL (A): 09900-25008 (Multi circuit tester set)

Tester knob indication

Continuity (•))



I931H1630107-02

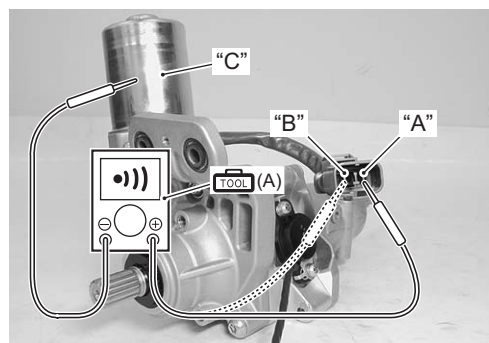
- Next, check for insulation with the tester between terminal "A" and body ground "C" and terminal "B" and body ground "C".
If continuity is found, replace the EPS body assembly with a new one.

Special tool

TOOL (A): 09900-25008 (Multi circuit tester set)

Tester knob indication

Continuity (•))



I931H1630108-02

Specifications

Tightening Torque Specifications

B931G36307001

Fastening part	Tightening torque			Note
	N·m	kgf·m	lbf·ft	
EPS control unit mounting nut	12	1.2	8.5	☞ (Page 6C-49)
EPS body assembly mounting bolt	26	2.6	19.0	☞ (Page 6C-52)
EPS body assembly mounting nut	28	2.8	20.0	☞ (Page 6C-52)
Steering shaft bolt	26	2.6	19.0	☞ (Page 6C-52)
Steering shaft upper nut	120	12.0	87.0	☞ (Page 6C-52)
Handlebar holder nut	60	6.0	43.5	☞ (Page 6C-53)

NOTE

The specified tightening torque is described in the following.

“EPS Control Unit Construction (LT-A750XP/ZK9) (Page 6C-48)”

Reference:

For the tightening torque of fastener not specified in this section, refer to “Tightening Torque List (LT-A750XP/ZK9) in Section 0C (Page 0C-7)”.

Special Tools and Equipment

Recommended Service Material

B931G36308001

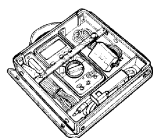
Material	SUZUKI recommended product or Specification	Note
Grease	Water resistance grease or equivalent P/No.: 99000-25160	☞ (Page 6C-51) / ☞ (Page 6C-52)
Thread lock cement	THREAD LOCK CEMENT SUPER “1303” or equivalent P/No.: 99000-32030	☞ (Page 6C-52)

Special Tool

09900-25008

Multi circuit tester set

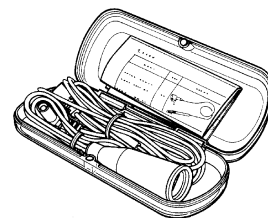
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 (Page 6C-53) /
 (Page 6C-53)



09900-25009

Needle-point probe set

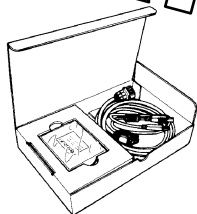
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09904-41010

SUZUKI Diagnostic system set

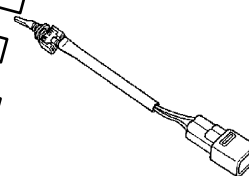
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 (Page 6C-24)



09930-82710

Mode select switch

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 (Page 6C-19)



09930-82720

Mode selection switch

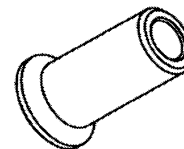
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09942-83110

Clip remover

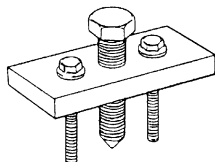
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09944-36011

Steering wheel remover

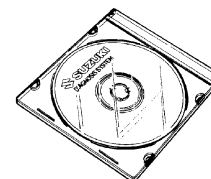
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99565-01010-020

CD-ROM Ver.20

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Section 9

Body and Accessories

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NOTE

For the items with asterisk (*) in the “CONTENTS” below, refer to the same section of the service manual mentioned in the “FOREWORD” of this manual.

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SAMPLE

Wiring Systems

Schematic and Routing Diagram

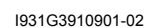
Wiring Diagram (LT-A750XP/ZK9)

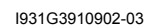
B931G39102003

Refer to "Wire Color Symbols in Section 0A in related manual".

SAMPLE

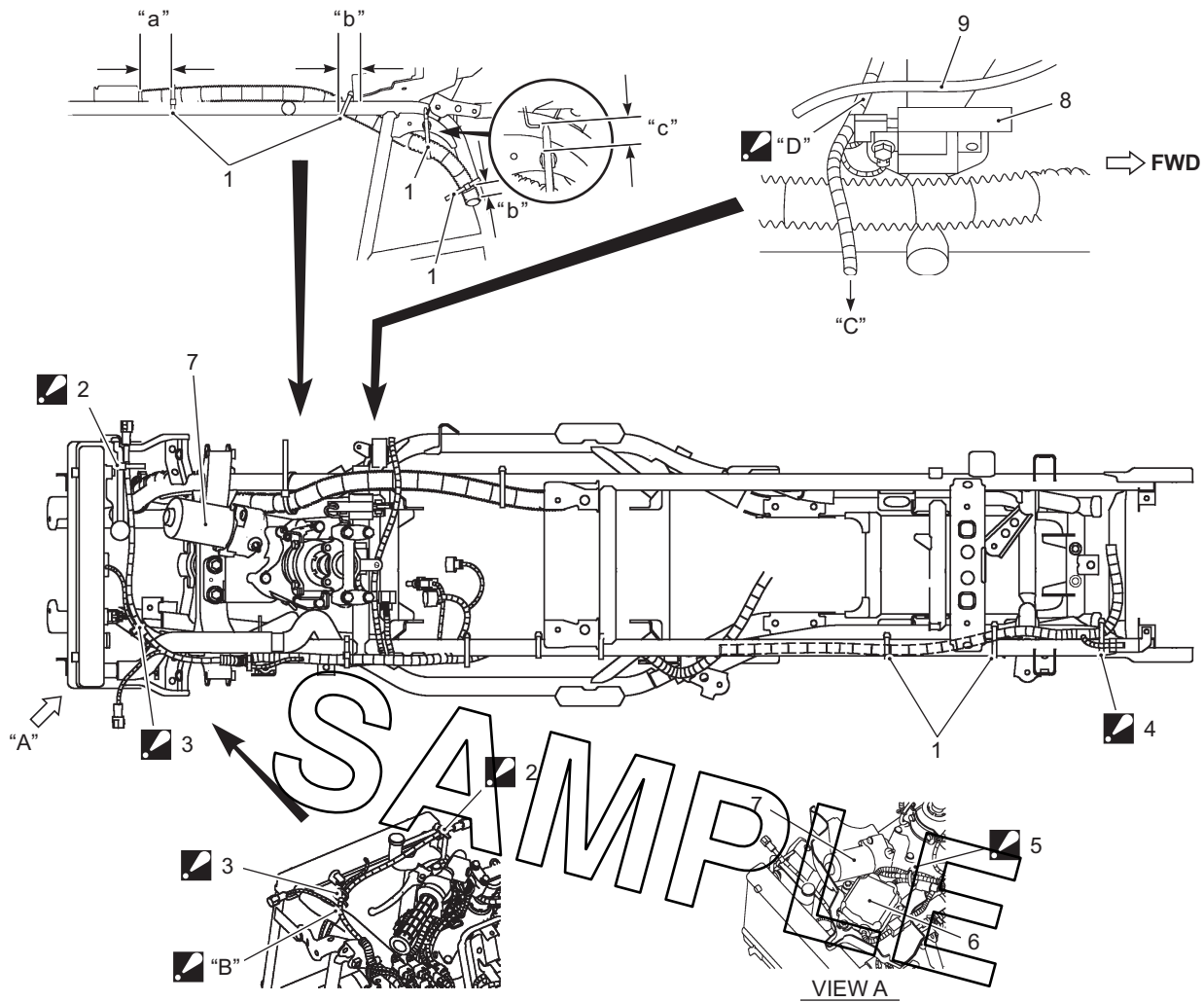
For P-17





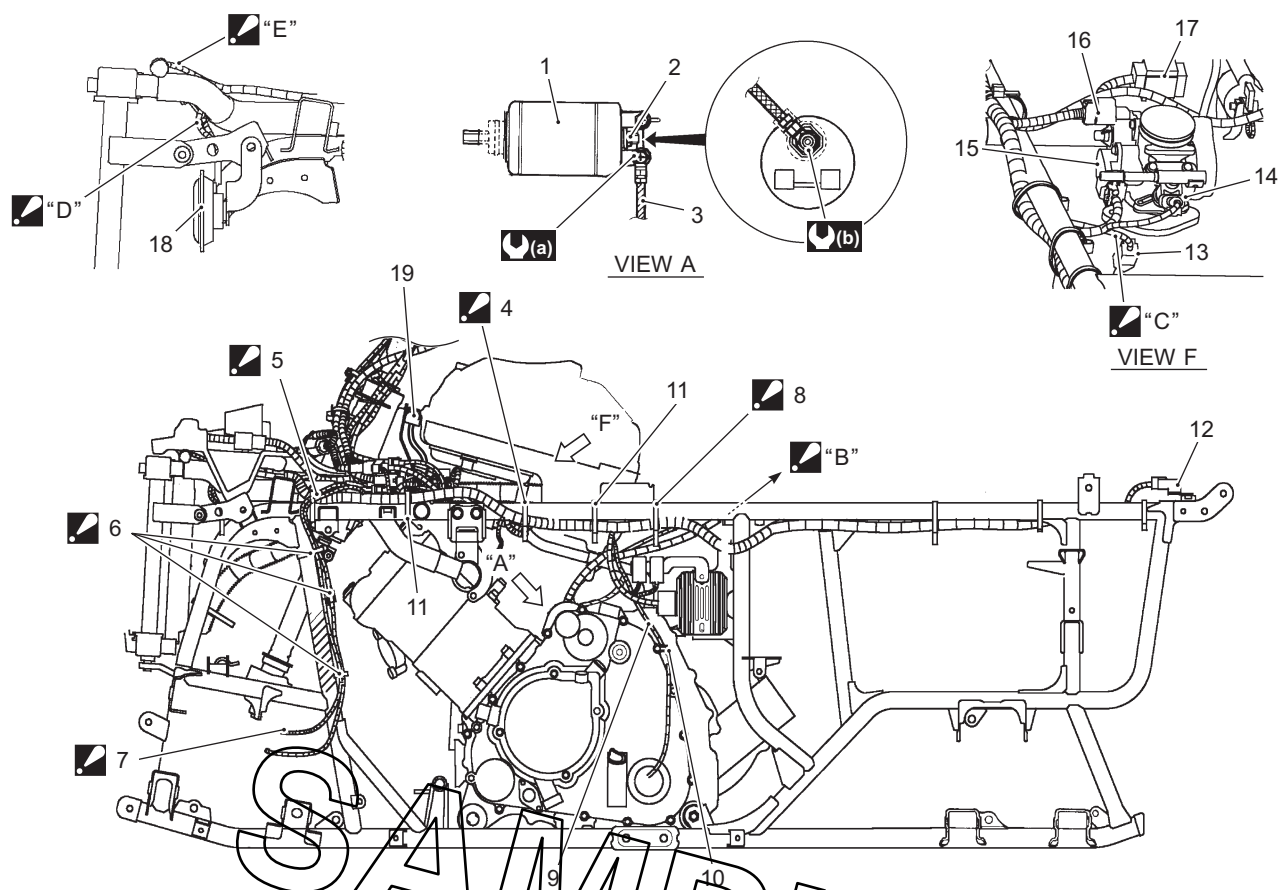
Wiring Harness Routing Diagram (LT-A750XP/ZK9)

B931G39102004



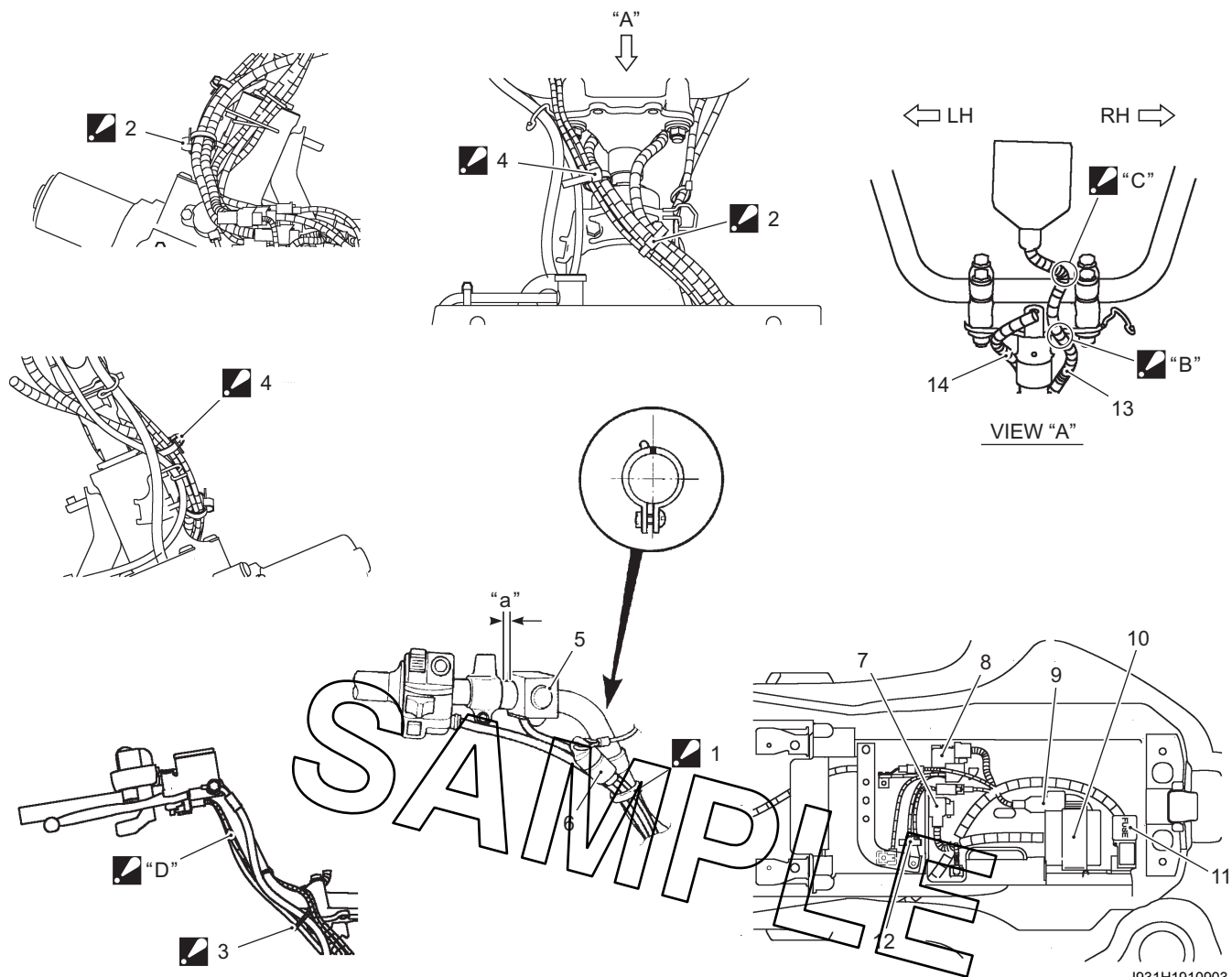
I931G3910905-02

1. Clamp	9. Throttle cable
2. Clamp : Bind the wiring harness and hose with the clamp.	"B": Pass the wiring harness and cooling fan lead wire over the radiator hose.
3. Clamp : Bind the wiring harness and cooling fan thermo switch with the clamp.	"C": To power source.
4. Clamp : Bind the wiring harness and back up relay (For P-17) with the clamp.	"D": Pass the wiring harness under of the throttle cable.
5. Clamp : Bind the EPS motor lead wire and EPS control unit lead wires.	"a": 60 – 80 mm (2.4 – 3.2 in)
6. EPS control unit	"b": 20 – 30 mm (0.8 – 1.2 in)
7. EPS motor	"c": 10 – 15 mm (0.4 – 0.6 in)
8. Ignition coil	



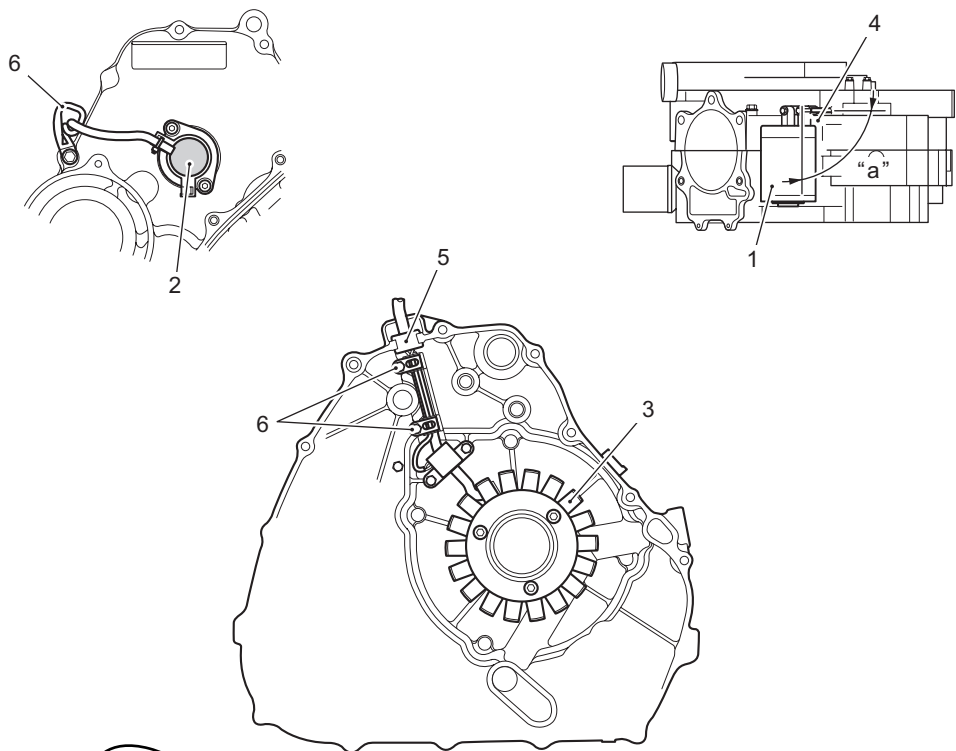
I931G3910903-02

1. Starter motor	14. Injector coupler
2. Starter motor terminal	15. TP sensor coupler
3. Engine earth	16. ISC valve coupler
4. Clamp : Bind the wiring harness and rear brake cable with the clamp.	17. TO sensor
5. Clamp : Bind the wiring harness and diff-lock actuator lead wire with the clamp.	18. Horn (For P-17, 24)
6. Clamp : Bind the diff-lock actuator lead wire and rear brake switch lead wire with the clamp.	19. IAP sensor
7. Clamp : Bind the rear brake switch lead wire with the clamp.	8. "B": To rear fender top.
8. Clamp : Bind the wiring harness, generator lead wire and gear position switch lead wire.	9. "C": Slack the read wire.
9. Speed sensor lead wire.	10. "D": Pass the horn lead wire inside of the stay.
10. Clamp	11. "E": Pass the branch of left headlight lead wire over the radiator hose.
11. Clamp	12. (a) : 10 N·m (1.0 kgf-m, 7.0 lbf-ft)
12. Back up relay (For P-17)	13. (b) : 6 N·m (0.6 kgf-m, 4.5 lbf-ft)
13. ECT sensor coupler	



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<p>1. Clamp : Bind the left handlebar switch lead wire, rear brake lever switch lead wire, horn lead wire (For P-17, 24) and emergency switch lead wire (For P-17) with the clamp. Cut the tip of clamp after clamping.</p>	<p>10. ECM</p>
<p>2. Clamp : Bind the combination meter lead wire, 2WD/4WD/diff-lock switch lead wire, ignition switch lead wire, front brake switch lead wire, parking/rear brake lever switch lead wire, left handlebar switch lead wire, horn lead wire (For P-17, 24) and emergency switch lead wire (For P-17) with the clamp. Cut the tip of clamp after clamping.</p>	<p>11. Fuse box</p>
<p>3. Clamp : Bind the front brake switch lead wire and 2WD/4WD/diff-lock switch lead wire with the clamp. Cut the tip of clamp after clamping.</p>	<p>12. Fuse (EPS)</p>
<p>4. Clamp : Bind the combination meter lead wire, 2WD/4WD/diff-lock lead wire and front brake switch lead wire with the clamp.</p>	<p>13. Combination meter lead wire</p>
<p>5. Horn button (For P-17, 24)</p>	<p>14. Ignition switch lead wire</p>
<p>6. Emergency switch (For P-17)</p>	<p>"a": 10 – 15 mm (0.4 – 0.6 in)</p>
<p>7. Drive relay</p>	<p>"B": Pass the combination meter lead wire behind the upper bracket.</p>
<p>8. Starter relay</p>	<p>"C": Slack the combination meter lead wire under the combination meter.</p>
<p>9. Fuel pump relay</p>	<p>"D": Pass the front brake switch lead wire behind the handlebars.</p>



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1. Starter motor	3. Generator stator	5. Grommet	"a": 90°
2. Gear position switch	4. Ground wire	6. Clamp	

Specifications

Tightening Torque Specifications

B931G3910S002

NOTE

The specified tightening torque is described in the following.
“Wiring Harness Routing Diagram (LT-A750XP/ZK9) (Page 9A-4)”

Reference:

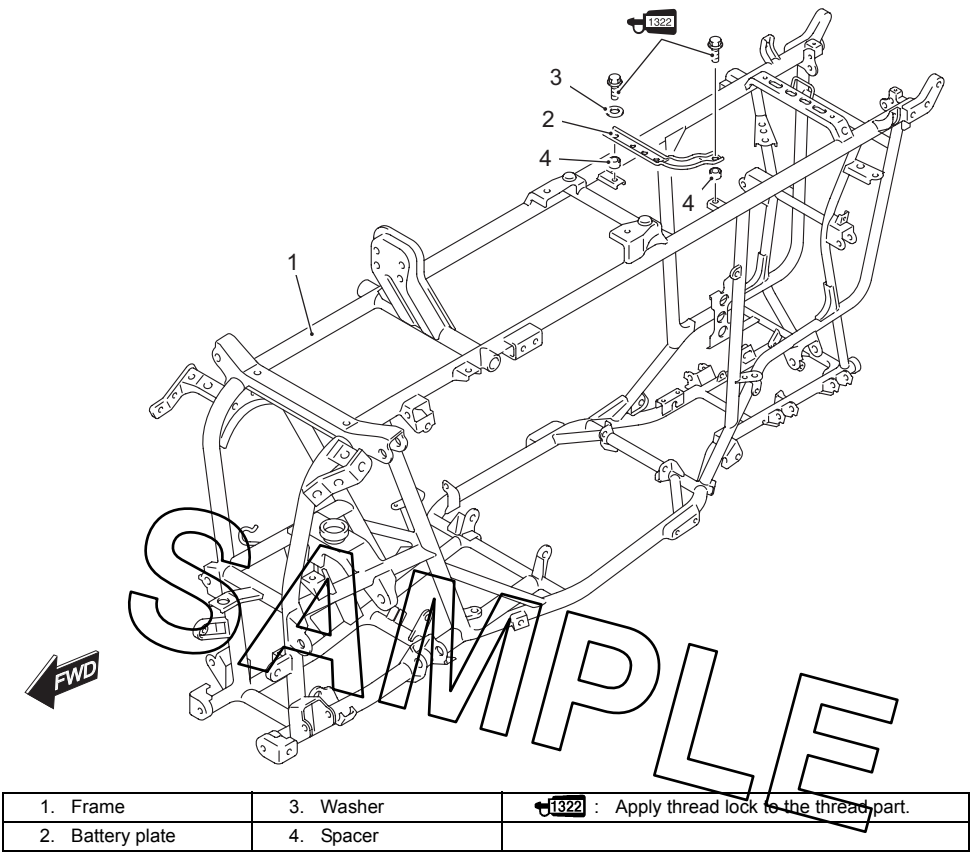
For the tightening torque of fastener not specified in this section, refer to “Tightening Torque List (LT-A750XP/ZK9) in Section 0C (Page 0C-7)”.

Body Structure

Repair Instructions

Body Frame Construction (LT-A750XP/ZK9)

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Special Tools and Equipment

Recommended Service Material

B931G39508001

NOTE

Required service material is also described in the following.
“Body Frame Construction (LT-A750XP/ZK9) (Page 9E-1)”

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